Synthetic Minor Operating Permit Revision
ENGINEERING EVALUATION REPORT
APPLICATION 14029

Pacific Steel Casting
Plant 22605
1333 2nd Street
Berkeley, CA 94710

June ~~May~~ 2018~~7~~

Prepared by:

Nicholas C. Maiden, P.E.
Principal Air Quality Engineer, BAAQMD

Reviewed by:

Greg A. Stone
Supervising Air Quality Engineer, BAAQMD

Pamela J. Leong
Director of Engineering~~Air Quality Engineering Manager~~, BAAQMD

~~Jaime Williams~~
~~Director of Engineering, BAAQMD~~

Executive Summary

Pacific Steel Casting operates a steel foundry in the City of Berkeley, California. Pacific Steel Casting has three physically separate buildings designated Plants # 1, # 2, and # 3 by the facility. Each plant differs in the size of castings it produces as well as the materials and process it uses to make casting molds.

As PSC predates Regulation 2, Rule 6 (adopted November 3, 1993) – the regulation implementing Title V of the federal Clean Air Act as amended in 1990 – each plant was originally permitted as a separate facility and given unique District facility numbers: 187 (Plant # 1), 703 (Plant # 2), and 1603 (Plant # 3).

In 2002, Pacific Steel Casting obtained a Synthetic Minor Operating Permit (SMOP) that covered operations at Plants # 2 and # 3. At the time, the two plants were considered "contiguous" per Regulation 2, Rule 6 (Major Facility Review) whereas Plant # 1 was not.

In 2005, the District reviewed the facility's operations and determined that Plant # 1 was considered "adjacent" to Plant # 2 and # 3. At this time, the District treated all three plants as one facility but maintained the separate District site numbers to aid the District's Compliance and Enforcement Division responding to air quality complaints.

As a result of the District's determination, Pacific Steel Casting was required to submit a permit application to revise their existing SMOP to include Plant # 1 sources.

Through 2008 to 2013, the District and Pacific Steel Casting conducted extensive ambient air quality monitoring, source stack testing, and a comprehensive review of emissions estimation methodologies, assumptions, and emission factors on an individual source basis.

In 2014, PSC filed for bankruptcy and then was acquired by a new owner. As is customary with all transfers of ownership, the District assigned a new site number (District Facility 22605). At this time, the District re-numbered PSC's sources to aid the District's Compliance and Enforcement Division.

In 2015, the District became aware that Pacific Steel Casting's pouring, cooling, and shake operations could potentially be large sources of carbon monoxide emissions, which were previously unknown. Although carbon monoxide emissions from other facility sources were accounted for, the District did not have emission estimates for carbon monoxide emission estimates for four permitted sources. The District and Pacific Steel Casting discussed how to account for these emissions, and ultimately agreed to accept a conservative emission factor to be source tested in the future.

This SMOP revision incorporates Plant # 1 sources as well imposes substantial new requirements and limits on an individual source basis to ensure that emissions remain and can be demonstrated to remain below the SMOP facility-wide emission limits.

Table of Contents

Appendices

Introduction to Permitting Requirements

There are different types of local and federal air permits and associated requirements. The District's authority to impose requirements and/or conduct certain analyses is limited by the type of permit and the statutory authority under which the District is acting.

There are two general types of permits issued by the District:

1. a preconstruction review permit that is issued for an individual piece of equipment or operation, and
2. a federal operating permit that is issued for an entire facility covering all equipment at that facility.

Preconstruction Review Permit

A preconstruction review permit is required before any person may construct, modify, or operate an individual piece of equipment or operation that has the potential to emit air pollutants.

By reviewing a proposed project before construction, the District may impose stringent emissions limitations, the use of emissions control devices, or a change in equipment or operational design than may have originally been proposed. Such project changes are typically less expensive if implemented before purchasing and construction have occurred rather than afterwards.

After 1979, preconstruction review has been conducted under the New Source Review (NSR) program. There are two separate NSR programs: Major NSR and Minor NSR.

Major New Source Review (Federal Permit)
Major NSR is a federal program that applies to facilities or projects whose emissions are considered "major". One of two preconstruction review federal permits may be issued under Major NSR depending on whether the District meets ("attainment") or does not meet ("nonattainment") federal standards (National Ambient Air Quality Standards or NAAQS) for the pollutant of interest.

For attainment pollutants that are increasing above certain thresholds, a Prevention of Deterioration (PSD) permit is issued. The purpose of PSD is to maintain the air quality in regions where the air is considered "clean". PSD requires:

- the installation of Best Available Control Technology (BACT),
- an air quality analysis to show that project emissions will not cause or contribute to a violation of any applicable NAAQS by showing ambient pollutant concentrations will not increase above a maximum allowable PSD threshold,
- an analysis of potential impacts on soils, vegetation, and visibility by any increase in emissions from the project and any associated growth that will occur in the area due to the project, and
- a request for and response to public comments concerning the project.

PSD BACT is "an emission limitation based on the maximum degree of reduction … which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant."

For nonattainment pollutants that are increasing above certain thresholds, a Nonattainment NSR permit is issued. Nonattainment NSR requires:

- the installation of the Lowest Achievable Emissions Rate (LAER),
- submitting emissions offsets, and
- a request for and response to public comments concerning the project.

LAER is either:

- "the most stringent emission limitation which is contained in the implementation plan of any State for such class or category, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or
- the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent."

Minor New Source Review (District Permit)

Minor NSR requires evaluating whether the equipment will need:

- to meet Best Available Control Technology (BACT),
- to have emissions offset by surrendering emission reduction credits,
- a health risk screening analysis, and/or
- to meet Best Available Control Technology for Toxics (TBACT).

New equipment may either be exempt or subject to NSR while changes at existing equipment may either be considered a "modification" and subject to NSR or an "alteration" if the change is not considered a "modification" and not subject to NSR.

Existing equipment installed before 1979 that has not been "modified" since 1979 is considered a pre-NSR source.

A District preconstruction review permit (an "Authority to Construct") allows a facility to construct or modify equipment. Once constructed or modified, a District operating permit (a "Permit to Operate") is required before a facility may continue operating the equipment.

The figure below highlights the different preconstruction review permits.

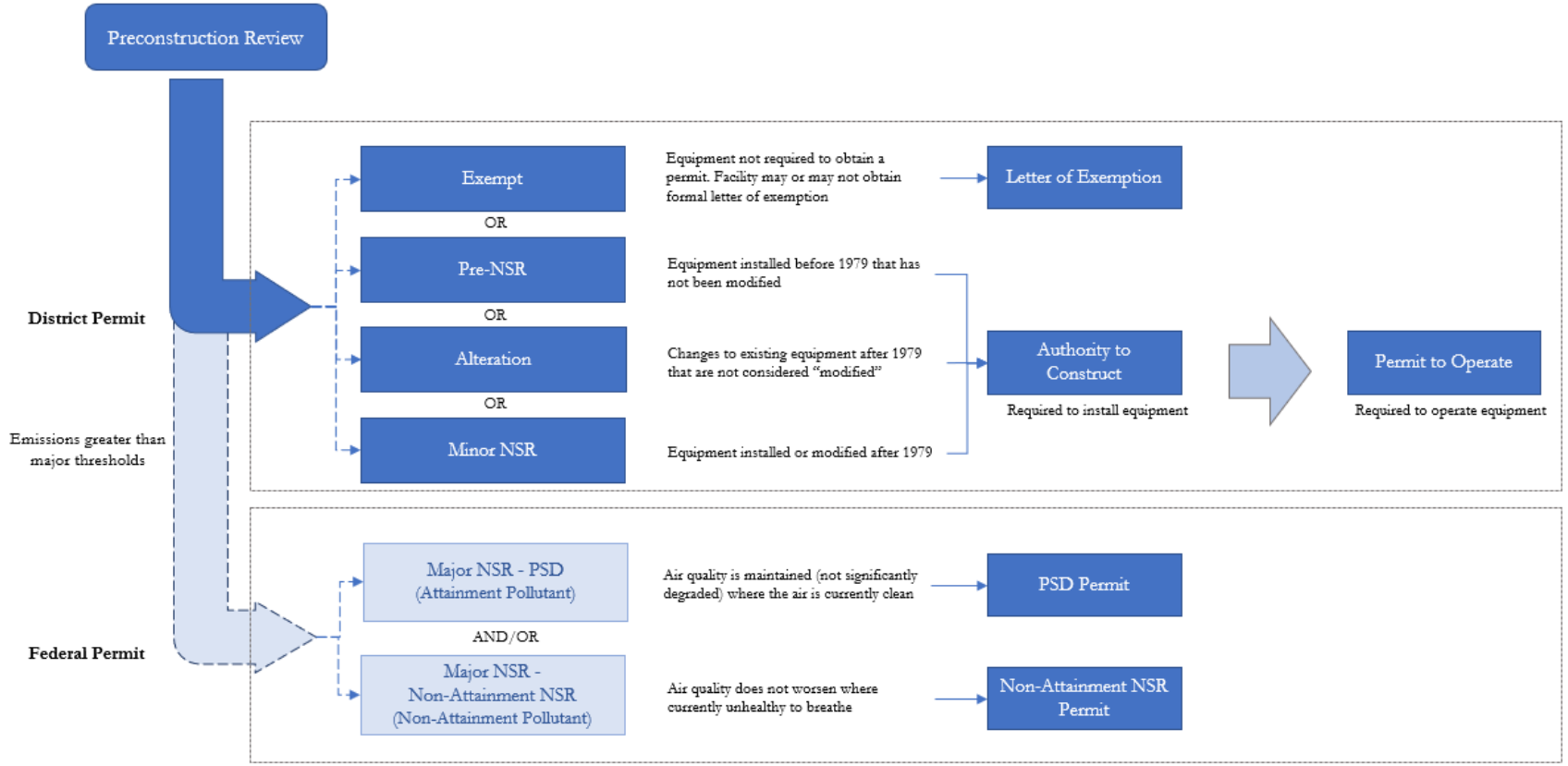

Figure 1. Types of preconstruction review permits

Federal Operating Permit

In addition to preconstruction review permits and District operating permits, a facility is required to obtain a federal operating permit (a "Title V Permit") if maximum emissions (or "potential to emit") from all equipment at a facility are greater than "major" thresholds.

The District implements and issues Title V permits through a delegation authority with the EPA.

Title V does not establish any new federal requirements for a facility but will list all significant sources of emissions as well as contain all applicable regulations and pre-construction permit conditions and any additional monitoring requirements needed to demonstrate compliance with an existing emissions limit.

If a facility's potential to emit is less than major facility thresholds, the facility is called a "minor" source.

A "minor" facility is called a "natural minor" if the facility's potential to emit is less than major facility thresholds.

A major facility may elect to become a "synthetic minor" by limiting the facility's potential to emit to less than major facility thresholds.

The figure below highlights the distinction between the various operating permits.

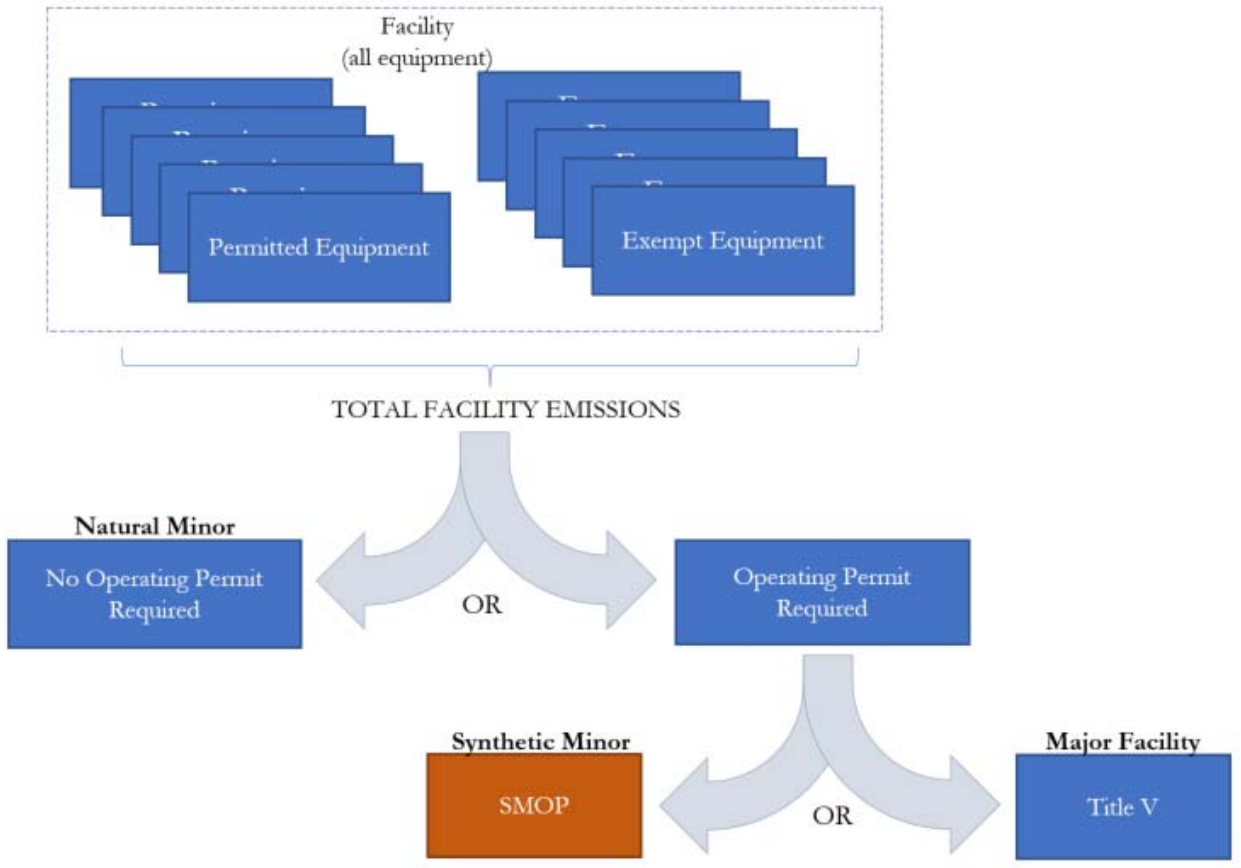

Figure 2. Types of federal operating permits

The District's authority to issue federal operating permits resides in District Regulation 2, Rule 6 (Major Facility Review). Unlike a preconstruction review or District operating permit which may be canceled, withdrawn, or denied; the District is required to issue a federal operating permit and is not allowed to impose any additional requirements (such as imposing new or additional control technology, lower emissions limits) apart from monitoring in a Title V permit. Any requirements other than additional monitoring would require that the facility submit an NSR application.

However, under District Regulation 2, Rule 6; the District does have the authority to impose sufficient requirements in a Synthetic Minor Operating Permit to demonstrate "practical enforceability" with facility-wide emission limits on a source-by-source basis.

Synthetic Minor Operating Permit

A facility may elect to limit its potential to emit by accepting permit conditions that limit emissions on an individual source basis. Such conditions are called the "Synthetic Minor Operating Permit". The District does not issue a separate physical permit like a Permit to Operate or a Title V permit for Synthetic Minor Operating Permits but rather issues the Synthetic Minor Operating Permit as conditions attached to a cover letter. These conditions are then included with all other conditions when the facility's Permits to Operate are renewed and re-issued annually.

In two recent petitions[1,2], the United States Environmental Protection Agency (EPA) outlined the criteria upon which a facility's potential to emit may be considered restricted. Per the EPA, "only limits that meet certain enforceability criteria may be used to restrict a facility's [Potential to Emit], and the permit must include sufficient terms and conditions such that the source cannot lawfully exceed the limit…. One of the key concepts in evaluating the enforceability of [Potential to Emit] limits is whether the limit is enforceable as a practical matter."[1]

When determining whether a condition is considered practically enforceable, EPA considers the following criteria:

- emissions are limited,
- all actual emissions (including startup, shutdown, upset, and malfunction) are considered in determining compliance with emissions limits,
- all emissions calculation procedures are specified,
- regular reporting of emissions and compliance with limits is required,
- periodic monitoring is required for calculating or consideration of emissions,
- recordkeeping is required for calculating or consideration of emissions, and
- emissions from all "insignificant activities" at the facility are included.

Practicably enforceable conditions should be:

- clear as to what limit applies and when,
- clear as to when compliance is required,
- short-term (so that compliance can be determined relatively quickly),
- clear as to what standard a source must meet, and
- clear as to how compliance will be determined.

As such, any proposed conditions that limit a facility's potential to emit should:

[1] U.S. EPA, *In the Matter of Yuhuang Chemical, Inc*, Order of Petition No. VI-2015-03
[2] U.S. EPA, *In the Matter of Hu Honua Bioenergy Facility*, Order of Petition No. IX-2011-1

- state that limits apply always including periods of startup, shutdown, upset, and malfunction
- state how emissions will be measured or calculated
- state how emissions will be verified
- state how emissions will be reported
- not be vague or subjective
- not have "after-the-fact" emissions testing, only testing only to verify compliance, and
- any instance of "District-approved" is defined.

Facility Background

Pacific Steel Casting (PSC) has submitted this application to revise the existing Synthetic Minor Operating Permit (SMOP) for its steel foundry ("facility") located in Berkeley, California.

PSC is a steel-casting foundry that operates three physically separate buildings or "Plants" (Plants # 1, # 2, and # 3) located in the City of Berkeley, California.

Plant # 1: 1328 2nd Street, Berkeley, CA 94710
Plant # 2 1420 2nd Street, Berkeley, CA 94710
Plant # 3: 1421 2nd Street, Berkeley, CA 94710

The three plants each produce different sized castings (metal products) from recycled scrap steel and other metals employing different molds, cores (mold inserts to form shape of metal casting), and binders (bonding agent used as an additive to mold or core sand to maintain shape).

Plant 1 began operations in the 1930's, produces castings from 1 to 1500 pounds, and uses the green sand mold process (comprising sand, bentonite clay, water, and corn starch).

Plant 2 began operations in 1975, produces castings from 1 ounce to 60 pounds, and uses phenolic shell binders for molds and cores. Plant 2 uses the Shell process for the molding system and the sand molding process uses a binder mixed with sand and is baked to form molds and cores for the castings.

Plant 3 began operations in 1981, produces large castings up to 7000 pounds, and uses phenolic no-bake binders for molds and cores. Plant 3 primarily uses a phenolic urethane binder mixed with the sand.

The facility's three plants follow a similar (but not identical) process:

(1) creating a mold, which consist of sand bound together in a specific shape (the sand is mixed with binder material for this purpose),
(2) melting the metal in an electric arc furnace,
(3) pouring the molten metal into transfer ladles and then into the cavity of the mold, and waiting for the metal to cool and harden,
(4) separating the cast component from the mold and cores by "shakeout" of the sand mold, and
(5) various finishing steps that include grinding and heat treating of the steel parts.

As PSC predates Regulation 2, Rule 6 (adopted November 3, 1993) – the regulation implementing Title V of the federal Clean Air Act as amended in 1990 – each plant was originally permitted as a separate facility and given unique District facility numbers: 187 (Plant # 1), 703 (Plant # 2), and 1603 (Plant # 3).

In 2002 (District Application 2399), the District issued a SMOP (codified in Permit Condition 20207) to comply with Title V permitting requirements for Plants # 2 and # 3 because the two plants were considered by the District to be contiguous properties (located across the street from each other). At the time, Plant # 1 was not considered contiguous because a separate business entity (Berkeley Forge) was located between Plant # 1 and Plant # 2.

In 2005, the District reviewed the three plants operations and determined that Plant # 1 is "adjacent" and functionally interrelated with Plant # 2 and Plant # 3 and that all three plants should be treated as one facility, subject to the requirements of District Regulation 2, Rule 6, which implements the Federal Title V operating permit program. The District determined that PSC had to apply to modify the SMOP to include Plant # 1, in accordance with District Regulation 2-6-422. For the detailed analysis, see the September 9, 2005 letter from Brian Bateman, Director of Engineering, to Joe Emmerichs, Vice President and General Manager of PSC,

attached to this Engineering Evaluation as Appendix A. At this time, the District treated all three plants as one facility but maintained the separate District site numbers to aid the District's Compliance & Enforcement division responding to air quality complaints.

Through 20058 to 20153, the District and Pacific Steel Casting conducted extensive ambient air quality monitoring, source stack testing, and a comprehensive review of emissions estimation methodologies, assumptions, and emission factors on an individual source basis. A detailed timeline is included within Appendix B. The table below lists sources, abatement devices, and emission points where emissions were tested between 2005 to 2015.

Table 1 – Sources and Abatement Device Source Test History

Plant	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	S-1001 S-1002 S-1003 S-1004		S-1001 Roof vents	S-1001	S-1001 S-1002 S-1003 S-1004 S-1005 S-1006 S-1007 S-1008	S-1001	S-1001 A-1002 A-1003 A-1004 A-1006	S-1001	S-1001 S-1002 S-1003 S-1004 S-1005 S-1006 S-1007 S-1008	S-1001	S-1001 S-1002 S-1003 S-1004 S-1005 S-1006 S-1007 S-1008
2	S-2006 S-2007 S-2008 S-2009 S-2010 S-2011 S-2012 S-2029 S-2030 S-2044 S-2045 S-2046 S-2047 S-2048 S-2049	S-2020 S-2021 S-2022 S-2023 S-2024 S-2027 S-2049 A-2007	Roof vents			P-2001 P-2002 P-2003 P-2006 P-2008 A-2007	A-2004 A-2005				
3	S-3001 S-3004 S-3014	S-3001 S-3004 S-3019 A-3003 A-3007	S-3001 S-3014 S-3019	S-3001	S-3001	S-3001 S-3004 S-3019	S-3001 A-3002 A-3004 A-3006	S-3001	S-3001	S-3001	S-3001

In 2014, PSC filed for bankruptcy and then was acquired by a new owner. As is customary with all transfers of ownership, the District assigned a new site number (District Facility 22605). At this time, the District re-numbered PSC's sources to aid the District's Compliance and Enforcement Division.

In 2015, the District became aware that PSCs pouring, cooling, and shake operations could potentially be large sources of carbon monoxide emissions, which were previously unknown. The District and PSC discussed how to account for these emissions, and ultimately agreed to accept a conservative emission factor ~~to be source tested in the future.~~that will be imposed as an emission limit and for which PSC will be required to conduct periodic source tests to demonstrate compliance.

Existing SMOP Condition 20207 limited precursor organic compound (POC) emissions from Plants 2 and 3 to 90 tons per year. For the SMOP revision, PSC requested to keep the same POC limit as well as impose conditions to ensure facility's emissions do not exceed 90 tons for any of the criteria pollutants. The facility

will be required to accept conditions limiting hazardous air pollutant (HAP) emissions to less than 9 tons per year for a single HAP and less than 23 tons per year for all HAPs combined.

Sources Covered by Synthetic Minor Operating Permit

The following tables list the sources and abatement devices at each Pacific Steel Casting plant that are covered by the Synthetic Minor Operating Permit. The tables also identify if the source emits oxides of nitrogen (NO_X), POC, particulate matter with aerodynamic diameters less than 10 microns (PM_{10}), carbon monoxide (CO), and sulfur dioxide (SO_2).

Table 1A - Plant 1 Sources

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
1001	Arc Furnace	Y	Y	Y	Y	Y
1002	Pour-Off Area	Y		Y	Y	
1003	B Shake Out (Dust Collection)		Y	Y		
1004	A Shake Out (Dust Collection)		Y	Y		
1005	Sand System (Dust Collection)		Y	Y		
1006	Sand Cooler 6 Screen		Y	Y		
1007	Sand Screen			Y		
1008	Muller			Y		
1010	Muller, Core Sand			Y		
1011	Muller			Y		
1012	Cleaning & Grinding Dept.			Y		
1013	Arc-Air Booth			Y		
1014	Arc-Air Booth			Y		
1015	Pangborn Table Blast			Y		
1016	Roto-Blast			Y		
1017	Roto-Blast			Y		
1018	Heat Treating Furnaces [exempt]	Y	Y	Y	Y	
1019	Raw Sand Receiving			Y		
1022	Core Bake Ovens [exempt]	Y	Y	Y	Y	Y
1027	Core-Making Operation		Y			
32001	Minor Combustion Sources (small ladle heater) [exempt]	Y	Y	Y	Y	Y

Table 1B - Plant 1 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	POC	PM_{10}	CO	SO_2
1001	Baghouse # 1			Y		
1002	Baghouse # 2			Y		
1003	Baghouse # 3			Y		
1004	Baghouse # 4			Y		
1006	Baghouse # 5a			Y		
1007	Carbon Adsorption System		Y			
1008	Baghouse, Cartridge			Y		
1009	Baghouse			Y		
1010	Baghouse Core Sand # 9			Y		

Table 2A – Plant 2 Sources

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
2001	Sand Silo Loading Elevator			Y		
2002	Sand Silo #1			Y		
2003	Sand Silo #2			Y		
2004	Bucket Elevator			Y		
2005	Resin Tank (Hai 789he)			Y		
2006	Sand Heater	Y	Y	Y	Y	Y
2007	Sand Coating		Y	Y	Y	Y
2008	Coated Sand Pug Mill		Y	Y	Y	Y
2009	Coated Sand Vibrating Screen		Y	Y	Y	Y
2010	Bucket Elevator		Y	Y	Y	Y
2011	Cooling Tower, Coated Sand		Y	Y	Y	Y
2012	Bucket Elevator		Y	Y	Y	Y
2013	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2014	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2015	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2016	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2017	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2018	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2019	Coated Sand Bin			Y		
2020	Shell Molding Machine, Single [exempt]	Y	Y	Y	Y	Y
2021	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2022	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2023	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2024	Shell Molding Machine, Single [exempt]	Y	Y	Y	Y	Y
2025	Abrasive Blaster, Core Area [exempt]			Y		
2026	Large Ladle Heater	Y	Y	Y	Y	Y
2027	Electric Arc Furnace	Y	Y	Y	Y	Y
2028	EAF ladle station w/canopy hood		Y	Y		
2029	Shell Mold Pouring Station		Y	Y		
2030	Cast Mold Cooling Room		Y	Y	Y	
2031	Shakeout & Tray Sanding		Y	Y		
2032	Rotoblast			Y		
2033	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2034	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2035	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2036	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2037	Grinder [exempt]			Y		
2038	Grinder [exempt]			Y		
2039	Grinder [exempt]			Y		
2044	Grinder [exempt]			Y		
2044	Sand Storage Silo	Y	Y	Y	Y	Y
2045	Lump Breaker	Y	Y	Y	Y	Y
2046	Flow Bin (rejected material)	Y	Y	Y	Y	Y
2047	Sand Cooler/Air Bed #1 (c-1)	Y	Y	Y	Y	Y
2048	Material Handling Equipment (3 hoppers, 3 bucket elevs …)	Y	Y	Y	Y	Y
2049	Thermal Recycling Unit (sand reclamation)	Y	Y	Y	Y	Y
32000	Miscellaneous Minor Sources [exempt]	Y	Y	Y	Y	Y

Table 2B - Plant 2 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	POC	PM_{10}	CO	SO_2

2001	Baghouse # 1			Y		
2002	Baghouse # 2			Y		
2003	Baghouse # 3			Y		
2004	Baghouse # 4			Y		
2005	Baghouse # 5			Y		
2006	Bag Filter			Y		
2007	Carbon Adsorption System		Y			
2010	Pulse Jet Bag House Dust Collector			Y		

Table 3A – Plant 3 Sources

Source	Description	Pollutant Emitted?				
		NO_X	**POC**	**PM_{10}**	**CO**	**SO_2**
3001	Electric Arc Furnace	Y	Y	Y	Y	Y
3002	Ladle Heater [exempt]	Y	Y	Y	Y	Y
3004	Casting mold shake out		Y	Y	Y	
3005	Blast table			Y		
3006	Tumble blast			Y		
3007	New Sand Silo #1			Y		
3009	Sand cooler classifier			Y		
3010	Sand conditioning unit #1			Y		
3011	Sand conditioning unit #2			Y		
3012	Return sand bin #1			Y		
3013	Reclaimed sand bin #2			Y		
3014	Mold mixing area		Y	Y		
3015	New sand receiving bucket elevator #1			Y		
3016	Bucket elevator #2 returned sand			Y		
3017	Bucket elevator #3 reclaimed sand			Y		
3018	Coating operation		Y	Y		
3019	~~Casting mold shake out station~~Pouring, Cooling			Y		
3020	Holcote 578 CCD Coating [exempt]			Y		
Exempt	Heat treat furnaces	Y	Y	Y	Y	Y
Exempt	Cleaning and Grinding in Finishing Room			Y		
Exempt	Arc Air Booth/Welding in Finishing Room			Y		

Table 3B – Plant 3 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	**POC**	**PM_{10}**	**CO**	**SO_2**
3001	EAF Baghouse			Y		
3002	Cleaning Room Baghouse # 1			Y		
3003	Shake Out Baghouse # 1			Y		
3004	Sand System Baghouse			Y		
3005	Mixer Sand Bin Dust Filter			Y		
3006	Cleaning Room Baghouse # 2			Y		
3007	Shakeout Baghouse # 2			Y		
3008	Carbon Adsorption System		Y			

Emissions

PSC sources emit criteria pollutants (NO_X, VOC, PM_{10}, CO, SO_2, lead) as well as HAPs and toxic air contaminants (TACs).

As emissions from some PSC sources are captured by collection ducts and abated by abatement devices, pollutants may be emitted out of emission stacks (if captured) or as fugitives (if not captured).

Therefore, a source's total emissions may be calculated using the following equations:

Captured Emissions = Throughput x Emission Factor x (Capture Efficiency) x (1 – Control Efficiency) [Eqn 1]

Fugitive Emissions = Throughput x Emission Factor x (1 – Capture Efficiency) [Eqn 2]

Total Emissions = Captured Emissions + Fugitive Emissions [Eqn 3]

Throughput is the amount of material processed by a source. Emission factor is the amount (pounds) of emissions per unit (e.g. tons of steel, gallon of coating, etc.) of throughput. Capture efficiency is the amount of emissions that is collected and vented to an abatement device. Control efficiency is the abatement efficiency of the abatement device.

After an extensive review of District records, source test reports, monitoring data, and other assumptions, the District estimated emissions from individual sources using proposed maximum throughputs and emission factors for each source as well as minimum required capture and abatement efficiencies for each abatement device.

To obtain a SMOP pursuant to Section 2-6-423.2.1, a facility must have permit conditions limiting the facility's potential to emit to no greater than 95 tons per year of any regulated air pollutant, 9 tons per year of any single HAP, and 23 tons per year of any combination of HAPs.

Criteria Pollutants

Potential to Emit

Using District records of the maximum design capacities of individual PSC sources as well as requested maximum annual throughputs, the District estimated PSC's facility-wide potential to emit, shown in Table 4.

Table 4 – Potential to Emit Emissions

	Potential to Emit (tons/year)					
Plant	**NO_X**	**POC**	**PM_{10}**	**CO**	**SO_2**	**Lead**
Plant # 1	6.65	11.71	74.74	122.58	10.75	0.006
Plant # 2	8.05	305.78	92.52	144.30	116.80	0.102
Plant # 3	3.66	18.7603	52.61	103.36	9.20	0.014
Facility (All Plants)	**18.36**	**336.2555.52**	**219.88**	**370.24**	**136.76**	**0.122**

As shown in Table 4, facility-wide emissions of POC, PM_{10}, CO, and SO_2 exceed the major source thresholds. Therefore, a SMOP is required.

Proposed Emissions

To be eligible for a SMOP, PSC agreed to lower throughputs for all individual sources located at all three plants.

With the lowered proposed maximum throughputs, proposed emissions were estimated by the District (see Table 5).

Table 5 – Proposed Emissions

	Proposed Emissions (tons/year)					
Plant	**NO_X**	**VOC**	**PM_{Total}**	**CO**	**SO_2**	**Lead**
Plant # 1	4.28	4.29	23.43	30.11	2.45	0.002
Plant # 2	31.16	36.99	16.62	31.16	14.87	0.058

Plant # 3	1.71	5.48	16.85	27.96	2.44	0.006
Facility (All Plants)	**10.04**	**46.76**	**56.90**	**89.24**	**19.77**	**0.066**

As Table 5 indicates, emissions of all criteria pollutant remain below 90 tons with new proposed maximum annual throughputs.

Detailed criteria pollutant emission calculations are shown in Appendix C and the bases for emission factors are listed in Appendix D.

Hazardous Air Pollutants (HAPs)

The table below shows the complete list of HAPs evaluated in the facility-wide Health Risk Assessment for PSC that was conducted to fulfill the requirements of AB 2588 and the annual emissions of each compound and total combined HAP emissions. Detailed HAP emission calculations are included in Appendix E.

The District's estimates show that at the maximum or permit limit levels, no individual HAP is emitted in amounts greater than 10~~9~~ tons per year and the combined HAP emissions are less than 2~~3~~5 tons per year, which are the major facility thresholds.

~~Note that copper and isopropanol are not HAPs. These materials were included in the Health Risk Assessment because these materials are listed as toxic air contaminants by the State of California.~~ In response to public comments received, the District reviewed the underlying basis and source tests for each emission factor that was used and identified several entries within the calculations where emission factors were listed as being derived from pre-control source test results rather than post-control. These entries were corrected and the emission estimates were revised with revised results shown in the table below.

~~Both the District's estimates and the HAP emissions data contained in the HRA indicate that monitoring for HAPs either individually or combined, does not appear warranted. However, the District has included a permit condition that requires PSC to calculate the emissions of HAPs individually and combined, by using District-approved emission estimation calculation methods.~~

Table 6 – HAP Emissions

Pollutant	**Potential to Emit** (tons/year)	**Proposed Emissions** (tons/year)
2-Methylnaphthalene	0.001	0.0004
Acenaphthene	0.02	0.005
Acenaphthylene	0.0001	0.00005
Acetaldehyde	0.002	0.001
Anthracene	0.2	0.03
Arsenic	0.002	0.001
Benz(a)anthracene	0.0001	0.00002
Benzene	0.3	0.1
Benzo(a)pyrene	0.00003	0.00001
Benzo(b)fluoranthene	0.0001	0.00002
Benzo(e)pyrene	0.00003	0.00001
Benzo(g,h,i)perylene	0.00002	0.00001
Benzo(k)fluoranthene	0.00002	0.00001
Beryllium	0.00052	0.000159
Cadmium	0.392	0.2225
Chromium (VI)	0.1	0.02

Pollutant	Potential to Emit (tons/year)	Proposed Emissions (tons/year)
Chromium, Total	0.0002	0.0001
Chrysene	0.00005	0.00002
Cresol, m,p-	0.02	0.01
Cresol, o-	0.1	0.02
Dibenzo(a,h)anthracene	0.000008	0.000003
Ethyl benzene	0.001	0.0004
Fluoranthene	0.0003	0.0001
Fluorene	0.003	0.001
Formaldehyde	2.3	0.4
Indeno(1,2,3-cd)pyrene	0.00002	0.00001
Lead	0.122	0.07
Manganese	1.2	0.6
MDI	0.003	0.001
Mercury	0.0018	0.0006
Naphthalene	0.4	0.1
Nickel	0.55	0.304
Perylene	0.00001	0.000002
Phenanthrene	0.002	0.001
Phenol	7.4	0.7
Pyrene	0.0002	0.0001
Selenium	0.001	0.0004
Toluene	0.03	0.01
Total PCDD/PCDF (TEF wt-equiv.)	1.6E-10	4.7E-11
Xylene, m,p-	0.02	0.01
Xylene, o-	0.01	0.004
Xylene, Total	0.01	0.002
Zinc	0.9	0.4
Total HAPs	**13.9**	**3.0**

As shown in the table above, revised emissions estimates do not show any individual HAP or the combination of HAPs exceeding either major facility thresholds.

Health Risk Assessment

Regulation 2, Rule 6 under which the District has the authority to issue a revised Synthetic Minor Operating Permit does not allow the District to conduct a new or revised Health Risk Assessment. However, ~~T~~the District required Pacific Steel Casting to prepare a Health Risk Assessment (HRA) to meet the requirements of the Air Toxics Hot Spots Program (Health and Safety Code Sections 44300 through 44394, AB2588 – Air Toxics "Hot Spots" Information and Assessment Act of 1987), which established a formal regulatory program for site-specific air toxics emissions inventory and health risk quantification that is managed by California air districts.

On November 5, 2008, the District approved the final HRA report and made it available for public review. The Office of Environmental Health Hazard Assessment (OEHHA) has also approved the final HRA report.

Following approval of the HRA, the District updated and finalized the criteria pollutant emissions inventory for PSC. Both the HRA and the criteria pollutant emissions inventory required extensive source testing starting in 2005 by both the District and PSC in order to develop more accurate, updated emissions estimates for both hazardous air pollutants (HAPs) and criteria pollutants for all three plants. PSC submitted a revised criteria pollutant emissions inventory for District review.

Results from the HRA indicate that the estimated maximum cancer risk is 31 in a million, the chronic hazard index is 1.8 and the acute hazard index is 0.85. The monthly averaged ambient air concentrations of lead are below levels that would impact blood lead levels in children. With an estimated maximum cancer risk that is greater than 10 in a million, PSC must provide public notification at least annually to the exposed public about its operations.

In addition, the District recently adopted Regulation 11, Rule 18 (Reduction of Risk from Existing Facilities), which will apply to the facility and require a new HRA be completed and that significant health risks be identified and mitigated. Any HRAs conducted to meet Regulation 11, Rule 18 will use the most accurate toxics emissions data available and may involve requiring facilities perform additional source tests to gather more data.

Synthetic Minor Operating Permit Limits

To obtain a District Synthetic Minor Operating Permit (SMOP) pursuant to Regulation 2-6-423.2.1, a facility must have permit conditions limiting the facility's potential to emit to no greater than 95 tons per year of any regulated air pollutant, 9 tons per year of any single hazardous air pollutant, and 23 tons per year of any combination of hazardous air pollutants.

The facility has proposed and will accept permit conditions that limit the overall POC, CO, SO_2, and PM_{10} emissions not to exceed 90 tons per year. The facility will also accept permit conditions that limit the throughput of all sources and require the facility to use the emission factors listed in Appendix C~~A~~ (detailed emission calculations) to calculate facility emissions, in order to assure compliance with the 90 tons per year limit. Emission factors have been established through source testing at the facility.

The facility emissions have a number of contributing variables. These variables include, but are not limited to:

- Steel production,
- Sand and binder usage,
- Size of cast products,
- Capture efficiency of abatement devices,
- Control efficiency of abatement devices, and
- ~~And o~~Organic content of materials.

As discussed in the Emissions section and shown in Equations 1, 2, and 3; maximum estimated emissions depend on a variety of inputs. Due to the complexity of the facility and to assure that facility-wide emissions do not exceed the SMOP limits, permit conditions will be imposed on an individual source basis.

The following sections address the specific conditions that will be imposed to assure each key emissions estimation assumption (e.g. emissions, maximum throughput, emission factors, abatement requirement, capture efficiencies, abatement efficiencies) remains valid.

Emissions

Emissions will be limited on both a facility-wide and individual source basis. To demonstrate compliance with these limits, the facility will be required to calculate emissions on quarterly basis ~~and~~ using District-approved

methodologies, ~~emissions~~ on an individual source, plant, and facility basis and total emissions for the previous 12 consecutive months.

Throughput

Throughputs will be limited on an individual source basis. To demonstrate compliance, the facility will be required to maintain records of daily production and report monthly throughputs on a quarterly basis.

Emission Factors

The emission factors used to estimate emissions will become enforceable limits. The facility will estimate individual source emissions using these emission factors and actual production throughput.

The basis for each emission factor is detailed in the detailed emission calculations of Appendix D~~A~~.

Abatement

Within the three plants, PSC has multiple hoods stationed through the plants that collect emissions from pouring, cooling, and shakeout operations as well as dedicated hoods that collect emissions from the electric arc furnaces (EAFs).

Collected emissions are routed to either baghouses to control PM_{10} emissions and/or to carbon adsorption units to control POC emissions.

Conditions will be imposed to require that equipment be abated by existing devices and that the facility properly operate and maintain abatement equipment to ensure continued abatement.

Additionally, the District is imposing a requirement to cease operation of emitting sources, when there is an indication that the abatement equipment is malfunctioning, in order to eliminate or prevent inadvertent or excess emissions. One condition will prohibit the operation of POC emitting equipment if it is determined that the carbon has experienced breakthrough (as determined by monitoring of the outlets).

Capture Efficiencies

Because of the nature of the operations, capture efficiencies of the facility's ventilation hoods and ducting cannot be 100 percent except for the EAFs during scrap melting. Therefore, conditions requiring minimum capture efficiencies on an individual source basis will be imposed. Additional requirements will be imposed to increase capture efficiencies. These include requirements for closing exhaust vents, maintaining negative pressure for each plant as well as individual rooms, and mandating where certain operations may occur.

To ascertain if emissions are being collected, the facility will be required to conduct source tests at the inlets of abatement devices.

The facility will also be required to maintain a minimum negative pressure in all buildings and enclosures with monitoring of either inlet face velocities at entryways or continuous monitoring of differential pressure.

Control Efficiencies

Abated equipment will have enforceable limits on the minimum control efficiencies. Source tests will be required at the inlets and outlets of abatement devices to determine compliance.

To ensure efficacy of abatement equipment, enforceable limits on the minimum and maximum pressure drop across each baghouse will be imposed and the facility will be required to install detectors and alarms on all baghouses to alert the facility of any broken bags. The facility will be required to monitor total hydrocarbons from each carbon adsorption system and replace the carbon whenever the abatement efficiency decreases below 90 percent.

Monitoring

In addition to abatement device parametric monitoring (e.g. baghouse pressure drop gauges, broken bag detectors, etc.), PSC will be required to install continuous total hydrocarbon analyzers (flame ionization detectors) to measure emissions from each carbon adsorption unit at Plants # 1 and # 2 (similar to current practices at Plant # 3) as well conduct a series of source tests.

The continuous total hydrocarbon analyzers will be required to be installed at Plants # 1 or # 2 once production or a contract for production exceeds ~~50~~65 percent of the maximum allowable production. A continuous analyzer is not required prior to the proposed threshold because the carbon adsorption unit, for which a FID would be used to determine if operating properly, may have zero abatement (i.e. not working) and estimated emissions would remain below the SMOP limit (90 tons). Therefore, requiring a FID is not warranted at such low throughputs.

PSC will be required to conduct the source tests listed in Table 7. Table 7 lists required source tests by pollutant and source, the deadline to complete the initial source test, and the frequency of source tests. The listed deadline period starts from either the issuance of the SMOP or if the source is not operating at the time of issuance, the date that the source begins operating after issuance of the SMOP.

Table 7 – Source Test Matrix

Pollutant	Plant(s)	Source(s)	Deadline	Frequency
PM_{10}	1~~, 2, 3~~	A-1009 EAF Baghouse~~s~~	120 days	Annual
	2	A-2003 EAF Baghouse	120 days	Annual
	3	A-3001 EAF Baghouse	120 days	Annual
	1~~, 2, 3~~	A-1001 Baghouse # 1 A-1004 Baghouse # 4 A-1007 Carbon Adsorption System A-1008 Baghouse ~~A-2001, A-2002~~ ~~A-3003, A-3007~~	1 year	Annual
	2	A-2001 Baghouse # 1 A-2002 Baghouse # 2 A-2003 Baghouse # 3 A-2007 Carbon Adsorption System	1 year	Annual
	3	A-3003 Shake Out Baghouse # 1 A-3007 Shake Out Baghouse # 2 A-3008 Carbon Adsorption System	1 year	Annual
	1	A-1002 Baghouse # 2 A-1008 Baghouse	3 years	Every three years
	2	A-2004 Baghouse # 4 A-2010 Pulse Jet Baghouse Dust Collector	3 years	Every three years
	3	A-3002 Cleaning Room Baghouse # 1 A-3003 Shake Out Baghouse # 1 A-3006 Cleaning Room Baghouse # 2 A-3007 Shake Out Baghouse # 2	3 years	Every three years
	1	A-1003 Baghouse # 3 A-1006 Baghouse # 5	5 years	Every five years
	2	A-2005 Baghouse # 5	5 years	Every five years
	3	A-3004 Sand System Baghouse	5 years	Every five years
CO	1~~, 2, 3~~	A-1009 EAF Baghouse~~EAF Baghouses~~	120 days	Every two years
	2	A-2003 EAF Baghouse	120 days	Every two years
	3	A-3001 EAF Baghouse	120 days	Every two years

Pollutant	Plant(s)	Source(s)	Deadline	Frequency
	1	S-1002 Pour Off Area S-1003 B Shake Out S-1004 A Shake Out	1~~3~~ years	Every five years
	2	S-2029 Shell Mold Pouring Station S-2030 Cast Mold Cooling Room S-2031 Shakeout & Tray Sanding	1 year	Every five years
	3	S-3004 Casting Mold Shake Out Station S-3019 Pouring and Cooling	1 years	Every five years
SO_2	2	S-2006 Sand Heater S-2007 Sand Coating S-2008 Coated Sand Pug Mill S-2009 Coated San Vibrating Screen S-2010 Bucket Elevator S-2011 Cooling Tower, Coated Sand S-2012 Bucket Elevator A-2004 Baghouse	120 days	Annual
Metals*	1~~, 2, 3~~	A-1009 EAF Baghouse~~s~~	120 days	Every three years
	2	A-2003 EAF Baghouse	120 days	Every three years
	3	A-3001 EAF Baghouse	120 days	Every three years
	3	S-3001 EAF	120 days	Initial
	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Filterable PM	1~~, 2, 3~~	A-1009 EAF Baghouse~~s~~	120 days	Every three years
	2	A-2003 EAF Baghouse	120 days	Every three years
	3	A-3001 EAF Baghouse	120 days	Every three years
	3	S-3001 EAF	120 days	Initial
	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
PAHs (as defined in Reg. 2-5)	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Benzene	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Formaldehyde	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial

Pollutant	Plant(s)	Source(s)	Deadline	Frequency
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Non-Methane Hydrocarbons	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
	2	S-2006 Sand Heater S-2007 Sand Coating S-2008 Coated Sand Pug Mill S-2009 Coated San Vibrating Screen S-2010 Bucket Elevator S-2011 Cooling Tower, Coated Sand S-2012 Bucket Elevator A-2004 Baghouse	120 days	Annual
*arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, nickel, selenium, zinc				

Monitoring Basis

When determining a frequency for required monitoring, the District considers the estimated emissions impacts, the expected variability in emissions, the difficulty of conducting the monitoring, and the cost to the facility.

There are four pollutants (PM_{10}, CO, SO_2, NMOC) that have estimated potentials to emit greater than major thresholds and thus, require periodic monitoring.

Of the equipment listed in Table 7, those with annual source test requirements comprise 88 percent of estimated PM_{10} potential to emit emissions, 76 percent of estimated SO_2 potential to emit emissions, and 89 percent of estimated NMOC potential to emit emissions.

The facility currently monitors NMOC emissions continuously from the Plant 3 carbon abatement system and will be required to continuously monitor NMOC emissions from the Plants 1 and 2 carbon abatement systems if the facility exceeds certain production rates.

The largest sources of CO emissions are the pouring, cooling, and shakeout sources, which comprise 73 percent of the potential to emit, at the three plants. However, as these are area sources that vent to multiple exhaust points, it is very difficult and expensive to source test. Therefore, the source test frequency considers the difficulty and cost entailed in source testing these sources.

Recordkeeping

To allow District personnel to calculate and verify emission estimates and determine compliance with imposed limits, PSC will be required to maintain and make available records on all throughputs, emission calculations, source tests, monitoring data, maintenance and inspections.

Reporting

On a quarterly basis, PSC will be required to report to the District the monthly throughputs of all sources, total emissions from Plants # 1, # 2, and # 3, and carbon monitoring data.

On an annual basis, PSC will be required to submit an annual compliance report.

In addition to the quarterly and annual reports, PSC will be required to report any non-compliance to the Director of Enforcement within 10 calendar days of discovery.

Statement of Compliance

Regulation 2, Rule 2 (New Source Review)

~~Regulation 2, Rule 2 applies to new or modified sources. None of PSC sources is considered new or modified with this application. Therefore, Regulation 2, Rule 2 does not apply.~~

Sources constructed after 1979 may potentially be subject to the New Source Review program if the source was not specifically exempted. Depending on the amount of emissions from the source, New Source Review may require that the source install Best Available Control Technology as part of either Minor NSR or Major NSR.

PSC is not applying to construct new or modify existing equipment with this application. However, because of this application, a question arose regarding whether NSR is applicable to CO emissions from Plant 3 pouring, cooling, and shakeout sources (S-3004 and S-3019).

CO Emissions from Plant 3 Pouring, Cooling, and Shakeout Operations

Pacific Steel Casting's operation at Plant 3 began in December of 1981 and therefore may have been subject to NSR requirements.

Plant 3's pouring, cooling, and shakeout operations were permitted under two separate source numbers:

- S-4 Casting Mold Shakeout, and
- S-19 Pouring, Cooling

These sources were subsequently re-numbered to S-3004 and S-3019 to aid in identifying the location of each source at which plant (S-1### sources at Plant 1, S-2### sources at Plant 2, and S-3### sources at Plant 3).

The facility submitted a permit application for Plant 3 on September 12, 1979 and was issued an Authority to Construct on October 24, 1979. At the time, the District had a different regulatory rule numbering scheme and the District's permitting requirements were listed in Section 1310 of Division 13 of the District's rulebook.

When PSC applied for an Authority to Construct for Plant 3, the following equipment was listed as being exempt from the requirement to obtain a permit to operate:

Section 1310 (amended March 16, 1977)
23 Shell core and shell-mold manufacturing machines
24 Molds used for the casting of metals

These exemptions were kept when the District's rules were re-codified into the current regulatory scheme and the permit requirements were re-numbered under Regulation 2, Rule 1 in October 7, 1981. However, exemption criteria of emitting less than 150 pounds of any pollutant per day was added.

S-3004 (as S-4 at the time) received an authority to construct and a permit to operate in 1981. However, S-3019 (as S-19 at the time) did not receive a permit to operate until 2007as a result of an application submitted in 2005.

At the time that Plant 3 was permitted, the District was not aware that pouring, cooling, and shakeout operations emit significant quantities of carbon monoxide (CO). The District has not found any evidence that the EPA or that industry was aware of this as evidenced by the absence of any mention of CO in the published emissions literature (e.g. AP-42) of the time.

If the District or the facility were aware of the quantities of CO potentially emitted by pouring, cooling, and shakeout operations, a loss of exemption permit application may have been required and an NSR review conducted at that time. If the result of an NSR review were the imposition of BACT and/or to conduct a PSD analysis, the amount of allowable CO permitted to be emitted by the Plant 3 pouring, cooling, and shakeout operations would certainly be lower, not higher, than currently proposed.

As the currently proposed conditions already limit total facility-wide CO emissions to less than the maximum allowable to obtain a SMOP, the SMOP may be issued without conducting an NSR analysis for Plant 3's pouring, cooling, and shakeout operations.

Further, the authority under which the District issues a SMOP (District Regulation 2, Rule 6), does not include the New Source Review analysis requirement. New Source Review is imposed under District Regulation 2, Rule 2 which becomes applicable when a source is considered new or modified under District Regulation 2, Rule 1. In order for a New Source Review analysis to be conducted, a separate application is required under Regulation 2, Rule 1. Therefore, a New Source Review analysis for the pouring, cooling, and shakeout operations at Plant 3 has not been included within the evaluation of this SMOP revision.

However, an additional condition will be imposed requiring the facility to submit a permit application for an NSR analysis to be conducted on Plant 3's pouring and cooling operation for CO. The condition will also require that the facility submit a change in SMOP conditions application if the result of the NSR application is to impose more stringent limitations, technology, or other NSR-related conditions on Plant 3's pouring and cooling operations.

California Environmental Quality Act (CEQA)

The application is exempt from CEQA per District Regulation 2-1-312.1, which states that applications to modify permit conditions for sources that do not involve any increases in emissions or physical modifications are exempt from CEQA. District Regulation 2-1-312.9 exempts projects pursuant to the State CEQA Guidelines, Section 15281 of the State CEQA Guidelines exempts Title V permit applications from CEQA.

Prevention of Significant Deterioration (PSD)

Per Regulation 2-2-304, PSD applies to either a new major facility or to a major modification at a major facility. The facility is not constructing a new source or making a major modification to the facility. The facility will be required to submit a permit applicating addressing whether NSR applies to CO emissions from S-3004 and S-3019.

Regulation 2, Rule 6 (Major Facility Review)

The facility is in compliance with the necessary requirements in Regulation 2, Rule 6 to obtain a SMOP. PSC has voluntarily accepted enforceable permit conditions including emissions limits that will keep facility annual emissions at or below 90 tons per year of any regulated air pollutant, 9 tons of any hazardous air pollutant, and 23 tons of any combination of hazardous air pollutants.

The facility will continue to comply with Regulation 2-6-310, which requires a facility of this size to accept permit conditions that limit emissions to not exceed 95 tons per year of any regulated air pollutant, 23 tons per year of combined HAPs and 9 tons per year of any single HAP.

SIP Regulation 2, Rule 6, Section 423.3 (Public Participation)

Prior to issuing a SMOP, SIP Regulation 2-6-423.3 requires providing 30 days of notice to the public for public comment. The District provided an initial public comment period from July 15, 2016 to August 15, 2016. At the request of the public and the EPA, this period was later extended an additional 30 days to September 15, 2016. At the request of the public, a second public comment period was held from December 6, 2016 to January 19, 2017 and the District held a community meeting in the City of Berkeley on December 14, 2016 to accept

public comments in person. In total, the District provided 105 days of notice to the public for public participation.

The District received comments on the draft report and conditions from 43 individuals, one online publication (Berkeley Citizen), two organized groups (West Berkeley Alliance for Clean Air and Safe Jobs; Golden Gate University School of Law, Environmental Law and Justice Clinic (ELJC)), and one public agency: the United States Environmental Protection Agency (EPA). After consideration of public comments received, this evaluation report and proposed permit conditions were significantly modified to address concerns of practical enforceability, regulatory applicability, as well as to provide clarity. District responses to public comments received are attached in Appendix F.

Regulation 3

Regulation 3 requires payment of permit fees. Fees have been invoiced and paid by Pacific Steel Casting.

Regulation 12, Rule 13 (Foundry and Forging Operations)

Regulation 12, Rule 13 requires an owner/operator of a foundry to: (1) develop an emissions minimization plan (EMP), (2) obtain approval from the District of an EMP, and (3) operate according to an approved EMP.

Pacific Steel Casting has developed and obtained approval of an EMP and is operating according to the EMP. A public version of the EMP has been attached in Appendix G.

New Source Performance Standards (NSPS)

The following NSPS are potentially applicable to Pacific Steel Casting:

- Title 40 CFR Part 60 Subpart A (General Provisions)
- Title 40 CFR Part 60 Subpart AA (Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 And On or Before August 17, 1983)

The District has been delegated authority for applicability determinations and compliance enforcement for the two subparts listed above (Subpart A and Subpart AA).

District records indicate the following startup dates for the three electric arc furnaces at Pacific Steel Casting:

Source	Description	Startup Date
1001	Arc Furnace	01/01/1965
2027	Electric Arc Furnace	12/01/1975
3001	Electric Arc Furnace	12/01/1981

Title 40 CFR Part 60 Subpart A includes general provisions such as compliance dates and definitions applicable to all 40 CFR Part 60 subparts.

Title 40 CFR Part 60 Subpart AA applies to electric arc furnaces and dust-handling systems that were constructed, modified, or reconstructed after October 21, 1974 and on or before August 17, 1983. Pacific Steel Casting has one such electric arc furnace (S-2027) and one associated dust handling system (A-2003) at Plant 2 and one electric arc furnace (S-3001) and one associated dust handling system (A-3001) at Plant 3 that would be subject to this NSPS.

NSPS Subpart AA includes the following requirements:

- Limit PM emissions to 0.0052 grains per dry, standard cubic foot
- Limit visible emissions from a control device to less than 3 percent opacity

- Limit visible emissions from a shop and, due solely to operations of any EAF to 6 percent opacity except to less than 20 percent opacity during charging periods and to less than 40 percent opacity during tapping periods
- Install and operate a continuous opacity monitor or a bag leak detection system and a certified visible emission observer takes at least one visible emissions observation per day for at least three 6-minute periods when the furnace is operating in the melting and refining period
- Recordkeeping of operational data (e.g. charge, tap, pressure readings, inspections, etc.)

A review of source tests conducted over the past 10 years at S-2027/A-2003 and S-3001/A-3001 indicate compliance with the NSPS Subpart AA emissions limits as shown in the table below.

Source/Abatement	Source Test	Test Date	PM Results (gr/dscf)	Comply with NSPS Subpart AA?
S-2027/A-2003	OS-1499	03/16/06	0.0011	Yes
S-3001/A-3001	OS-1502	12/21/05	0.0036	Yes
S-3001/A-3001	OS-1656	06/29/06	< 0.0001	Yes
S-3001/A-3001	OS-2567	08/26/08	0.0011	Yes
S-3001/A-3001	OS-3059	10/01/09	0.0003	Yes
S-3001/A-3001	OS-3502	10/28/10	< 0.0005	Yes
S-3001/A-3001	OS-3968	10/26/11	< 0.0002	Yes
S-3001/A-3001	OS-4322	10/24/12	< 0.0006	Yes
S-3001/A-3001	OS-4883	12/03/13	0.0001	Yes
S-3001/A-3001	OS-5557	12/19/14	0.0003	Yes
S-3001/A-3001	OS-6028	11/18/15	0.0004	Yes

A search of District Enforcement records for the past 10 years resulted in one record of an opacity violation (NOV A54093A) at the Plant 2 EAF (S-2027, A-2003) and none at Plant 3. The facility corrected the cause (faulty baghouse bags) of the opacity violation and is expected to continuing complying with NSPS Subpart AA.

The facility has installed a bag leak detection system at S-3001/A-3001 but has not installed one on S-2027/A-2003. The matter is currently being investigated by the District's Enforcement Division. However, the facility will be required to install a bag leak detection system as a proposed SMOP condition and will therefore, comply with NSPS Subpart AA.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

The~~re~~ following NESHAPs are potentially applicable to Pacific Steel Casting:

- Title 40 CFR Part 63 Subpart A (General Provisions)
- Title 40 CFR Part 63 Subpart EEEEE (NESHAPs for Iron and Steel Foundries)
- Title 40 CFR Part 63 Subpart YYYYY (NESHAPs for Area Sources: Electric Arc Furnace Steelmaking Facilities)
- Title 40 CFR Part 63 Subpart ZZZZZ (NESHAPs for Iron and Steel Foundries Area Sources)

NESHAP EEEEE applies to major sources of HAPs whereas NESHAP ZZZZZ applies to minor (area) sources of HAPs.

Per 40 CFR Part 63 Subpart A (40 CFR 63.2), facilities defined as major sources of HAPs are those that emit, or has the potential to emit considering controls, more than 10 tons per year of any individual HAP or more than 25 tons per year of any combination of HAPs.

As shown in Table 6, the facility's potential to emit HAPs is less than 10 tons per year on an individual basis and less than 25 tons per year on a combination basis. Therefore, the facility is considered a minor source of HAPs and is subject to 40 CFR 63 Subpart ZZZZZ.

NESHAP ZZZZZ classifies facilities as either small or large and has different thresholds for small and large based upon if the facility is considered a new or existing facility.

For new (or reconstructed) facilities, a facility is defined as small if the annual melting capacity is less than 10,000 tons or less.

For existing facilities, a facility is defined as small if it produced less than 20,000 tons for the calendar year 2008.

A facility is considered new if it commenced construction or reconstruction prior to September 17, 2007.

Pacific Steel Casting constructed Plant 1 (1930's), Plant 2 (~1975), and Plant 3 (~1981) prior to September 17, 2007 and although Pacific Steel Casting has made changes at the three plants, none of those changes would exceed the 50 percent fixed capital cost threshold included in the definition of reconstruction in 40 CFR 63.2.

Therefore, Pacific Steel Casting is considered an existing source for purposes of NESHAP ZZZZZ.

According to the District's emissions inventory, Pacific Steel Casting produced more than 20,000 tons of steel in the calendar year 2008. Therefore, the facility is considered a large foundry per NESHAP ZZZZZ.

NESHAP ZZZZZ lists the following requirements for large steel foundries:

- Prepare written materials specifications for a metallic scrap management program,
- Require scrap metal vendors remove mercury switches from vehicle bodies,
- Use binder formulations that do not contain methanol,
- Limit PM emissions from all metal melting furnaces to less than 0.8 pounds per ton of metal charged
- Limit HAP emissions from all metal melting furnaces to less than 0.06 pounds per ton of metal charged,
- Limits visible emissions from all metal melting furnaces to less than 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 30 percent,
- Prepare and operate according to a written operation and maintenance (O&M) plan for each control device used to comply with the PM, metal HAP, or opacity emissions limit.
- Monthly visual inspections of baghouse ductwork for leaks or install a bag leak detection system,
- Inspect baghouse interiors for structural integrity every 6 months or install a bag leak detection system,
- Monthly inspections of equipment important to performance of total capture system (i.e. pressure sensors, damps, and damper switches) and repair found defects as soon as practicable but no longer than 90 days,
- Keep records of all deviations, written materials specifications, binder formulation, monthly melt production, O&M plan, and compliance demonstrations; and
- Submit semiannual reports of any exceedances of emissions limits.

At a minimum, each O&M plan must include the following:

- General facility and contact information;

- Positions responsible for inspecting, maintaining, and repairing emissions control devices which are used to comply with Subpart ZZZZZ;
- Descriptions of items, equipment, and conditions that will be inspected, including an inspection schedule for the items, equipment, and conditions. For baghouses that are equipped with bag leak detection systems, the O&M plan must include the site-specific monitoring plan required by 63.10897(d)(2), and
- Identify and estimated quantity of the replacement parts that will be maintained in inventory.

Currently, the District has not been delegated authority for enforcing compliance with 40 CFR 63 Subpart ZZZZZ. Therefore, EPA is responsible for enforcing compliance ~~with compliance~~ with 40 CFR 63 Subpart ZZZZZ.

NESHAP YYYYY applies to new and existing electric arc furnaces at an area source of HAPs. An electric arc furnace is considered existing if it was constructed prior to September 20, 2007 and new if constructed after that date.

NESHAP YYYYY includes the following definitions:

Electric arc furnace (EAF): an electric arc furnace as "a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. An electric arc furnace consists of the furnace shell, roof, and the transformer.

Electric arc furnace steelmaking facility: a steel plant that produces carbon, alloy, or specialty steels using an EAF. This definition excludes EAF steelmaking facilities at steel foundries and EAF facilities used to produce nonferrous metals.

Nonferrous metals: any pure metal other than iron or any metal alloy for which an element other than iron is its major constituent by percent by weight

NESHAP YYYYY lists the following requirements for existing electric arc furnaces at an area source:

- Must have or obtain a permit under 40 CFR Part 70 or 40 CFR Part 71
- Either implement a pollution prevention plan for metallic scrap selection and inspection or restrict certain metallic scrap
- If using motor vehicle scrap, implement a program for preventing mercury switches in scrap
- Install and operate a capture system and control device for removal of PM
- Limit PM emissions from EAFs to less than 0.8 pounds per ton of steel or to less than 0.0052 grains of PM per dry standard cubic foot
- Limit visible emissions to less than 6 percent opacity
- Conduct initial source tests for PM per specified EPA methods
- Monitor the capture system and PM control device per compliance assurance monitoring requirements in 40 CFR Part 64

The District has not been delegated authority for making an applicability determination nor for enforcing potential compliance with 40 CFR 63 Subpart YYYYY. Therefore, the EPA is responsible for making any applicability determinations and for enforcing compliance if Pacific Steel Casting is found to be subject to 40 CFR 63 Subpart YYYYY.

Compliance Assurance Monitoring (CAM)

Title 40 CFR Part 64 outlines the requirements for compliance assurance monitoring.

CAM applies to equipment located at a facility considered a major source that meets the following three-part test:

- Subject to an emission limitation or standard, and
- Use a control device to achieve compliance, and
- Have pre-control emissions that exceed or are equivalent to the major source threshold.

As discussed above, the electric arc furnaces are subject to a PM and HAP emissions limitation (40 CFR Part 63 Subpart ZZZZZ) and use baghouses to achieve compliance. The pre-control PM emissions from each individual electric arc furnace (S-1001, S-2027, and S-3001) exceed the major source threshold.

Section 40 CFR 63.10686(e) of 40 CFR Part 63 Subpart YYYYY requires following the requirements of 40 CFR Part 64.

Therefore, a CAM plan would be required if Pacific Steel Casting were a major source or subject to 40 CFR Subpart YYYYY. As Pacific Steel Casting has elected to obtain a SMOP and the District has not been delegated authority for 40 CFR Part 63 Subpart YYYYY, a CAM plan is not required until such time that the facility becomes a major source or the EPA determines the facility to be subject to 40 CFR Part 63 Subpart YYYYY.

Synthetic Minor Operating~~on~~ Permit Conditions

~~**Condition # 20207:**~~

~~Pacific Steel Casting (PSC) Plants 1, 2, and 3 (collectively District Plant # 22605), have a synthetic minor operating permit (SMOP). This SMOP covers all sources at the facility as of the date of permit issuance.~~

~~These conditions establish the permit terms that ensure this plant is classified as a Synthetic Minor Facility under District Regulation 2, Rule 6 - Major Facility Review and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. All applications submitted by the applicant and all modifications to the facility's equipment after issuance of this SMOP must be evaluated to ensure that the facility will not exceed the synthetic minor operating permit limits below and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.~~

~~Any revision to a condition establishing this facility's status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a Synthetic Minor must undergo the procedures specified by Rule 2-6, Section 423. The basis for the synthetic minor conditions is an emission limit for each regulated air pollutant of less than 90 tons per year at the facility, an emission limit for a single hazardous air pollutant of less than 9 tons per year at the facility, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year at the facility.~~

~~The District's SMOP contains adequate monitoring to enable the District to verify compliance with the SMOP emissions limits.~~

~~The permitted sources (S-#) at Plant 1 on the date of issuance of this synthetic minor permit are:~~

~~1001 ARC FURNACE~~
~~1002 POUR-OFF AREA~~
~~1003 B SHAKE OUT (DUST COLLECTION)~~
~~1004 A SHAKE OUT (DUST COLLECTION)~~
~~1005 SAND SYSTEM (DUST COLLECTION)W/WHIRL AIR FLOW SYSTEM~~
~~1006 SAND COOLER,6 SCREEN,W/MOLD RELEASE COATING OPERATION~~
~~1007 SAND SCREEN~~
~~1008 MULLER~~
~~1010 MULLER, CORE SAND~~
~~1011 MULLER~~
~~1012 CLEANING & GRINDING DEPT.~~
~~1013 ARC AIR BOOTH~~
~~1014 ARC AIR BOOTH~~
~~1015 PANGBORN TABLE BLAST~~
~~1016 ROTO-BLAST~~
~~1017 ROTOBLAST~~
~~1018 HEAT TREATING FURNACES~~
~~1019 RAW SAND RECEIVING~~
~~1022 CORE BAKE OVENS~~
~~1027 Core Making Operation~~
~~32001 MINOR SOURCES~~

~~The permitted abatement devices (A-#) at Plant 1 on the date of issuance of this synthetic minor permit are:~~

~~1001 BAGHOUSE # 1~~

~~1002 BAGHOUSE # 2~~
~~1003 BAGHOUSE # 3~~
~~1004 BAGHOUSE # 4~~
~~1006 BAGHOUSE # 5A~~
~~1007 CARBON ADSORPTION SYSTEM~~
~~1008 BAGHOUSE, CARTRIDGE~~
~~1009 BAGHOUSE~~
~~1010 BAGHOUSE CORE SAND # 9~~

~~The permitted sources (S-#) at Plant 2 on the date of issuance of this synthetic minor permit are:~~

~~2001 SAND SILO LOADING ELEVATOR~~
~~2002 SAND SILO #1~~
~~2003 SAND SILO #2~~
~~2004 BUCKET ELEVATOR~~
~~2005 RESIN TANK (LIQUI BIN)~~
~~2006 SAND HEATER~~
~~2007 SAND COATING~~
~~2008 COATED SAND PUG MILL~~
~~2009 COATED SAND VIBRATING SCREEN~~
~~2010 BUCKET ELEVATOR~~
~~2011 COOLING TOWER, COATED SAND~~
~~2012 BUCKET ELEVATOR~~
~~2013 CORE MOLDING MACHINE [EXEMPT]~~
~~2014 CORE MOLDING MACHINE [EXEMPT]~~
~~2015 CORE MOLDING MACHINE [EXEMPT]~~
~~2016 CORE MOLDING MACHINE [EXEMPT]~~
~~2017 CORE MOLDING MACHINE [EXEMPT]~~
~~2018 CORE MOLDING MACHINE [EXEMPT]~~
~~2019 COATED SAND BIN~~
~~2020 SHELL MOLDING MACHINE, SINGLE [EXEMPT]~~
~~2021 SHELL MOLDING MACHINE, TWIN [EXEMPT]~~
~~2022 SHELL MOLDING MACHINE, TWIN [EXEMPT]~~
~~2023 SHELL MOLDING MACHINE, TWIN [EXEMPT]~~
~~2024 SHELL MOLDING MACHINE, SINGLE [EXEMPT]~~
~~2025 ABRASIVE BLASTER, CORE AREA [EXEMPT]~~
~~2026 LARGE LADLE HEATER~~
~~2027 ELECTRIC ARC FURNACE~~
~~2028 EAF LADLE STATION W/CANOPY HOOD~~
~~2029 SHELL MOLD POURING STATION~~
~~2030 CAST MOLD COOLING ROOM~~
~~2031 SHAKEOUT & TRAY SANDING~~
~~2032 ROTOBLAST~~
~~2033 ABRASIVE CUT OFF SAW [EXEMPT]~~
~~2034 ABRASIVE CUT OFF SAW [EXEMPT]~~
~~2035 ABRASIVE CUT-OFF SAW [EXEMPT]~~
~~2036 ABRASIVE CUT OFF SAW [EXEMPT]~~
~~2037 GRINDER [EXEMPT]~~
~~2038 GRINDER [EXEMPT]~~
~~2039 GRINDER [EXEMPT]~~
~~2040 GRINDER [EXEMPT]~~
~~2044 SAND STORAGE SILO~~

2045 LUMP BREAKER
2046 FLOW BIN (REJECTED MATERIAL)
2047 SAND COOLER/AIR BED #1 (C-1)
2048 MATERIAL HANDLING EQUIPMENT (3 HOPPERS,3 BUCKET ELEVS, ONE TRUCK
2049 (R-1), THERMAL RECYCLING UNIT (SAND RECLAMATION)
32000 MISCELLANEOUS MINOR SOURCES [EXEMPT]

The permitted abatement devices (A #) at Plant 2 on the date of issuance of this synthetic minor permit are:

2001 BAGHOUSE # 1
2002 BAGHOUSE # 2
2003 BAGHOUSE # 3
2004 BAGHOUSE # 4
2005 BAGHOUSE # 5
2006 BAG FILTER
2007 CARBON ADSORPTION SYSTEM
2010 PULSE JET BAG HOUSE DUST COLLECTOR

The permitted sources (S #) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 ELECTRIC ARC FURNACE
3002 LADLE HEATER [EXEMPT]
3004 CASTING MOLD SHAKE OUT STATION
3005 BLAST TABLE
3006 TUMBLE BLAST
3007 NEW SAND SILO #1
3009 SAND COOLER CLASSIFIER
3010 SAND CONDITIONING UNIT #1
3011 SAND CONDITIONING UNIT #2
3012 RETURN SAND BIN #1
3013 RECLAIMED SAND BIN #2
3014 MIXER SAND BIN
3015 NEW SAND RECEIVING BUCKET ELEVATOR #1
3016 BUCKET ELEVATOR #2 RETURNED SAND
3017 BUCKET ELEVATOR #3 RECLAIMED SAND
3018 MOLD COATING OPERATION
3019 POURING AND COOLING
3020 HOLCOTE 578 CCD COATING

The permitted abatement devices (A #) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 EAF BAGHOUSE
3002 CLEANING ROOM BAGHOUSE # 1
3003 SHAKE OUT BAGHOUSE # 1
3004 SAND SYSTEM BAGHOUSE
3005 MIXER SAND BIN DUST FILTER
3006 CLEANING ROOM BAGHOUSE # 2
3007 SHAKEOUT BAGHOUSE # 2
3008 CARBON ADSORPTION SYSTEM & DUCTING

For the purposes of these SMOP conditions, the following terms have the following meanings:

"**facility**" shall mean and comprise Plants 1, 2, and 3;

"**owner/operator**" shall mean the owner or operator of the facility;

"**operations**" shall mean and include material handling, mixing, mold making activities, melting, pouring, cooling, shakeout, grinding, and sand recycling;

"**operational hour**s" shall mean those periods of time during which material handling, mixing, mold making activities, melting, pouring, cooling, or shakeout operations are taking place at a facility plant;

"**cooling operations**" shall mean the period of time commencing with the pouring of casting and concluding with the commencement of shakeout operations at a plant;

"**shakeout operations**" shall mean the period of time commencing with any separation of the casting from the mold and ends with a complete removal of the casting from the shakeout station with all of the sand from the mold contained in the shakeout operation;

"**carbon cycle**" at a plant shall mean the commencement of carbon adsorption system operation with a fresh batch of carbon through the last day of operation with that same batch of carbon.

"**maintain**" shall mean maintain and keep in good repair at all times.

For the purposes of this SMOP, if two or more carbon beds together abate one or more sources, the carbon beds together constitute a "carbon adsorption system." If a single carbon bed abates a specific source or sources exclusively, that carbon bed constitutes a "carbon adsorption system" for the source or sources. The carbon adsorption systems at the facility are A-1007 at Plant 1, A-2007 at Plant 2, and A-3008 at Plant 3. Unless a permit condition refers to a specific carbon adsorption system at one of the plants, a reference to a carbon adsorption system means and applies to all of the carbon adsorption systems.

SMOP EMISSIONS LIMITS/REQUIREMENTS

1. The owner/operator shall not allow the facility to exceed any of the following emissions limits in any consecutive 12-month period:
   a. 90 tons in any consecutive 12-month period of any regulated air pollutant including, but not limited to, precursor organic compounds (POC), carbon monoxide (CO), particulate matter less than 10 microns (PM10), sulfur dioxide (SO2), and oxides of nitrogen (NOx), but not including hazardous air pollutants (HAPs);
   b. 9 tons in any consecutive 12-month period of any single HAP, and
   c. 23 tons in any consecutive 12-month period of any combination of HAPs.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

2. The owner/operator shall not allow the facility to exceed any of the throughputs, emissions factors, and/or emissions specified in these SMOP conditions as well as SMOP Conditions 24466 (Plant 1), 24548 (Plant 2), and 24547 (Plant 3). All data and assumptions contained in this part as well as Conditions 24466, 24547, and 24548 shall be considered enforceable limits.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

   3. The owner/operator shall use a District-approved calculation method to demonstrate compliance with the criteria pollutant emission limits contained in both Parts 1a and 2.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

4. The owner/operator shall use a District-approved calculation method to demonstrate compliance with the hazardous air pollutants (HAPs) emissions limits contained in Parts 1a and 1c.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

INTERIM ORGANIC EMISSIONS AND CARBON EFFICIENCY MONITORING AT PLANTS 1 AND 2

5. Within 30 days of the issuance of this SMOP and until installation of flame ionization detectors (FIDs) at each carbon adsorption system (pursuant to Part 6 below), the owner/operator shall operate the carbon adsorption systems at A-1007 at Plant 1 and A-2007 at Plant 2 in a manner to prevent carbon breakthrough as defined in this Part 5.

a. The owner/operator shall conduct hydrocarbon sampling at both the inlets and outlets of each carbon adsorption system's carbon bed during either pouring or shake-out operations at the sources abated by the carbon adsorption system. The owner/operator shall also conduct analysis of all hydrocarbon samples. The owner/operator shall have such hydrocarbon sampling and analysis conducted by an entity approved in advance by the District. The hydrocarbon sampling and analysis shall be conducted a minimum of once every calendar day.

b. If carbon breakthrough occurs at one of the carbon adsorption systems, the owner/operator shall cease all mixing, pouring, and/or shakeout operations at the respective plant where carbon breakthrough has occurred, until the carbon is replaced in accordance with Part 5c.

c. The owner/operator shall replace all carbon at that carbon adsorption system with fresh carbon no later than 24 hours after carbon breakthrough has occurred. If the owner/operator has poured a mold less than 24 hours prior to carbon breakthrough, then the owner/operator shall continue to abate the cooling operation for a minimum of 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.

d. The owner/operator shall submit a carbon breakthrough report within 10 days of breakthrough to the Director of Engineering, with a copy to the Director of the Compliance and Enforcement. The plant report shall include all of the following information about the carbon cycle in which carbon breakthrough occurred and the sources abated by that plant's carbon adsorption system:

1. The date, time and location of each daily hydrocarbon sample taken and whether pouring and/or shake out operations occurred during the sampling.
2. The daily hydrocarbon sampling's analytical results.
3. The number of days of operation prior to breakthrough.
4. The daily tonnage of steel throughput.
5. The number of castings produced each day during the operation period prior to breakthrough.
6. The total tons of sand used each day during the operation period prior to breakthrough.
7. The total tons of binder and catalyst materials used each day during the operation period prior to breakthrough.
8. The date and time of the last pouring operation prior to breakthrough.

For purposes of this Part 5 only, "carbon breakthrough" shall be defined as not achieving a minimum control efficiency of 88.0 percent by weight as determined by the daily hydrocarbon sampling at each carbon adsorption system at all times the system is in operation. The "carbon cycle" shall be defined as the period from installation of a fresh load of carbon at the carbon adsorption system until carbon breakthrough. [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

CARBON ADSORPTION SYSTEMS (Plants 1, 2, and 3)

The following Parts 6 through 17 require the installation and operation of an organic vapor analyzer-flame ionization detector (FID) system for each carbon adsorption system in Plants 1, 2, and 3 as the parametric monitoring and recording system to demonstrate compliance with the Synthetic Minor Operating Permit, including the determination of carbon breakthrough and verification of system control efficiencies.

6. Within 90 days of either exceeding 4,500 tons of steel production at Plant 1 or Plant 2 or of an indication that production will exceed 4,500 tons of steel at Plant 1 or Plant 2, unless prior to the expiration of the 90-day period the APCO approves a later date not to exceed 180 days of the issuance of the SMOP, the

owner/operator shall properly install a District-approved FID system to measure and record both the inlet and outlet volatile organic compounds (VOC) concentration of each of the carbon adsorption systems for A-1007 at Plant 1 and A-2007 at Plant 2. This parametric monitoring system shall provide for the calculation and recording of VOC mass emissions from the inlet and outlet of each carbon adsorption system, control efficiencies, and carbon breakthrough determinations.

[Basis: Regulations 2-6-423, 2-1-403, 1-523, 1-301, 7, cumulative increase, Rule 2-5]

7. The owner/operator shall properly operate each FID system at all times that any of the respective sources that are being abated by each carbon adsorption system is operating. Each FID system shall do the following:
   a. Continuously monitor (i.e. generate at least one valid data point of VOC concentration every 15 minutes) and record at both the inlet and outlet at each carbon adsorption system. If necessary as determined by the APCO, the owner/operator shall substitute the missing data through use of a best engineering practice acceptable to the APCO.
   b. Continuously calculate VOC mass emissions from each inlet and outlet VOC concentration data point.
   c. Calculate the abatement efficiency of each carbon adsorption system for each set of inlet and outlet data points and averaged over each calendar day and carbon cycle.
   d. Determine VOC concentrations by subtracting the FID system bias from the FID measurement.

   The FID system shall be subject to the requirements of Regulation 1-523 and those requirements set forth in Parts 8 and 9 below.

   [Basis: Regulations 1-523, 2-6-423, 1-301, 7, cumulative increase]

8. The owner/operator of the facility's FID systems shall:
   a. Properly maintain the FID systems and keep the FID systems in good repair;
   b. Repair FID monitors expeditiously, which shall be no later than 24 hours after discovery of a FID-related malfunction;
   c. Calibrate each FID at least once on each day of operation of the respective carbon adsorption system and re-calibrate each FID following its repair or maintenance;
   d. Maintain monitors to be accurate within 20% when compared with a reference test method or within 10% of the applicable standard including the limits contained within these conditions;
   e. Replace or clean FID system tubing during carbon change-out of the FID's respective carbon adsorption system in order to minimize FID system bias; and
   f. Establish FID system bias weekly using hydrocarbon-free air or zero gas introduced to the probe tip. The system bias shall be used until the next system bias is determined. The owner/operator shall maintain the system bias to less than 30 ppmv THC as C1.

   [Basis: Regulations 1-523, 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

9. The owner/operator shall properly maintain all carbon adsorption systems and keep all the carbon adsorption systems in good repair at all times in accordance with the manufacturer's specifications and in a manner to assure that both the carbon adsorption systems and the abated sources remain in compliance with this SMOP.

   [Basis: Cumulative Increase, Regulation 2-1-403]

10. The owner/operator shall properly operate A-3008 at Plant 3 at all times during any mixing, pouring, cooling, and/or shakeout operations at S-3019 Pouring and Cooling Area, S-3004 Shakeout Station, and/or S-3014 Mixer. If carbon breakthrough, as defined below, occurs at A-3008, the owner/operator shall cease immediately all mixing, pouring and shakeout operations at Plant 3. The owner/operator shall replace all carbon in A-3008 at Plant 3 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below. If a pouring operation has occurred within the previous 24 hours of carbon breakthrough, the owner/operator shall not replace the carbon until A-3008 has abated the emissions from the cooling molds/castings for at least 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.

For the purposes of this SMOP "carbon breakthrough" for A-3008 at A-3 occurs when any one of the following conditions exists at A-3008:

i. the inlet total hydrocarbon (THC) loading is greater than or equal to 220 pounds per calendar day, the abatement efficiency is less than 88.0 % by weight averaged over the twenty-four period of each calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds, or

ii. the inlet THC loading is less than 220 pounds per calendar day, the outlet THC emissions are greater than or equal to 55 pounds per calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds.

The owner/operator shall not exceed an inlet THC loading that measures or exceeds 15,000 pounds.
[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

11. The owner/operator shall properly operate A-1007 at Plant 1 at all times during the operation of any or all of S-1002 Pour Off Area, including cooling operations; S-1003-B Shakeout; S-1004-A Shakeout; A-1001 Baghouse; and A-1008 Baghouse. If carbon breakthrough, as defined below occurs at A-1007, the owner/operator shall cease immediately all pouring and shakeout operations at Plant 1. Furthermore, the owner/operator shall replace all carbon in A-1007 at Plant 1 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

Breakthrough definition will be determined within applications required to be submitted as specified in this part below.

In order to establish the initial and subsequent carbon breakthrough-related parameters, the owner/operator shall submit applications to the District within 30 days of collection of 6 months, one year, and two years of FID data from the date of issuance of this permit condition. The APCO shall determine enforceable parameters for Plant 1 following similar FID data analysis used to determine the carbon breakthrough-related parameters for Plant 3 in Part 10.
[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

12. The owner/operator shall properly operate A-2007 at Plant 2 at all times during the operation of any or all of S-2022, S-2023, S-2026, S-2029, S-2030, S-2031, S-2032, A-2001, and A-2002. If carbon breakthrough, as defined below, occurs at A-2007, the owner/operator shall cease immediately all pouring and shakeout at Plant 2. Furthermore, the owner/operator shall replace all carbon in A-2007 at Plant 2 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

Breakthrough definition will be determined within applications required to be submitted as specified in this part below.

In order to establish the initial and subsequent carbon breakthrough-related parameters, the owner/operator shall submit applications to the District within 30 days of collection of 6 months, one year, and two years of FID data from the date of issuance of this permit condition. The APCO shall determine enforceable parameters for this Plant 2 following similar FID data analysis used to determine the carbon breakthrough-related parameters for Plant 3 in Part 10
[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

13. The owner/operator shall operate each carbon adsorption system (A-1007, A-2007, A-3008) to achieve a "minimum control efficiency," which shall be at least 90.5% by weight on a carbon cycle basis. For the purposes of this SMOP, a carbon cycle commences on the date of installation of a load of "fresh" carbon at the carbon adsorption system through the date of removal of that load as "spent" carbon. The owner/operator shall demonstrate compliance with the "minimum control efficiency" through the use of the FID data on each carbon adsorption system's inlet and outlet concentration measurements and verified on a carbon cycle basis. If the owner/operator discovers that a carbon adsorption system has failed to meet the "minimum control efficiency," the owner/operator shall report the non-compliance in accordance with Part 55.
[Basis: Regulations 2-6-423, 2-1-403, 2-5]

14. The owner/operator shall have on-site a full replacement load of fresh carbon for carbon change out at A-1007, A-2007, or A-3008 no later than five business days following carbon replacement at A-1007, A-2007, or A-3008. The owner/operator shall notify the District staff no later than three business days after each carbon replacement.

The following is considered full replacement load for each carbon abatement device:

A-1007	12,350 lbs/carbon bed	37,000 lbs/three carbon beds
A-2007	9,667 lbs/carbon bed	29,000 lbs/three carbon beds
A-3008	52,000 lbs/carbon	

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

15. If carbon breakthrough occurs as defined in Parts 10, 11, and/or 12, the owner/operator shall submit a report of non-compliance in accordance with Part 55.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

16. The owner/operator of Plant 1, 2, and 3 shall properly install and properly operate both audible and visual alarms to be triggered at carbon breakthrough as defined in Part 10, 11, and/or 12.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

17. The owner/operator shall not operate the carbon adsorption systems in a manner such that the outlet THC concentration exceeds the inlet THC concentration measured as C1 by the FIDs.
[Basis: Regulation 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

18. The owner/operator shall properly maintain and properly operate a continuous pressure monitor that shall measure and record the pressure drop across each carbon adsorption system carbon bed and each carbon system prefilter. The owner/operator shall cease all pouring and shakeout operations whenever the pressure drop across each carbon adsorption system carbon bed that abates the respective pouring and shakeout operations is lower than one inch water gauge and greater than nine inches water gauge.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

19. Within 30 days of issuance of the SMOP, the owner/operator shall submit to the Director of Engineering the operating range of the prefilter for each carbon adsorption system carbon bed, which will become an enforceable permit condition. The APCO shall administratively add the pressure drop parametric condition including a monitoring frequency.
[Basis: Regulations 2-1-403, 2-6-423]

20. The owner/operator shall not change materials that may increase either VOC and/or HAP emissions, or result in the emissions of a toxic air contaminant not previously emitted, without obtaining prior approval of an application for the revision from the District Engineering Division. Any change in materials shall be submitted on a Data Form X with an attached MSDS. The owner/operator of this

facility (including Plants 1, 2, and 3) shall not use any materials containing chlorinated compounds without obtaining prior approval from the District Engineering Division.
[Basis: Regulations 2-1-301, 7, 1-301, 2-5, cumulative increase]

21. The owner/operator shall not use purchased pre-coated sand at Plant 3. Prior to the use of purchased pre-coated sand at Plant 3, the owner/operator shall submit an application to the District in order to obtain an Authority to Construct and/or Permit to Operate for the use of purchased pre-coated sand at Plant 3.
[Basis: Regulation 2-5, Cumulative Increase]

EMISSIONS CAPTURE / COLLECTION

Facility (Plants 1, 2, and 3):

22. The owner/operator shall maintain a negative pressure at each of the plant's exterior doors, windows, and other openings as identified and required within Appendix D of the facility's Odor Management Plan.
[Basis: Regulations 2-1-403, 2-6-423]

23. The owner/operator shall maintain a negative pressure at each of the plant's interior doors, windows, and other openings as identified and required within Appendix F of the facility's Odor Management Plan.
[Basis: Regulations 2-1-403, 2-6-423]

Plant 1:

24. The owner/operator of the Plant 1 S-1004 Line "A" deck conveyor system shall maintain all rubber/plastic strips in good condition and ensure that there are no missing rubber/plastic strips or damaged strips. The owner/operator shall not operate the S-1004 Shake Out if there is any missing or damaged rubber/plastic strips.
[Basis: Regulations 2-1-403, 2-6-423]

25. The owner/operator of Plant 1 S-1003 Shake Out shall not store or allow any open or cracked molds outside of the Plant 1 shakeout station, except as provided below for flasked molds. The owner/operator shall only open molds that are in the shakeout station, except that it may open flasked molds (unflasking) up to 5 minutes prior to placing the molds in the shakeout station. The owner/operator of Plant 1 S-1003 "Line B" shall not remove opened or cracked molds until shakeout is completed in the Shake Out Station. The owner/operator shall not cease shakeout until all castings in the shakeout station are removed from the molds.
[Basis: Regulations 2-1-403, 2-6-423]

26. The owner/operator shall abate all pouring and cooling operations on the Main Floor Area of S-1002 by A-1007.
[Basis: Regulations 2-1-403, 2-6-423]

Plant 3:

27. The owner/operator of Plant 3 shall keep the two exhaust vents above the molding area (S-3014) fully closed at all times of operation of S-3014. The owner/operator of Plant 3 shall shut off the roof fans and fully close the dampers when the roof intake vents are shut off. The owner/operator shall only perform maintenance on S-3014 while S-3014 is not operating. The owner/operator of S-3014 shall only open these two exhaust vents above S-3014 during periods of maintenance.

[Basis: Regulations 2-1-403, 2-6-423]

28. The owner/operator of Plant 3 shall not have any fugitive visible emissions from S-3004 at Plant 3, while S-3004 Casting Mold Shakeout Station is operating. The owner/operator shall complete the shakeout and ensure that sand is not left and/or stored in S-3004.
[Basis: Regulations 2-1-403, 2-6-423]

BAGHOUSE MONITORING AND SOURCE TEST REQUIREMENTS

Notes: Baghouses associated with carbon or electric arc furnaces (EAFs) require broken bag leak detection device or APCO pre-approved alternative in order to identify improper operation of the baghouses, which will require immediate corrective action. All other baghouses require pressure drop monitoring. Basis: 2-1-403.

Plant 1 Broken Bag Leak Detection Device (A-1001 and A-1008 CARBON and A-1009 EAF)
Plant 1 Pressure Drop (A-1001, A-1002, A-1003, A-1004, A-1006, S-1008, S-1009)

Plant 2 Broken Bag Leak Detection Device (A-2001 and A-2002 CARBON and A-2003 EAF)
Plant 2 Pressure Drop (A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, S-2010)

Plant 3 Broken Bag Leak Detection Device (A-3003 and A-3007 CARBON and A-3001 EAF)
Plant 3 Pressure Drop (A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, A-3007)

29. The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 1 Source S-1001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-1009 Baghouse at Plant 1.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

30. The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 2 Source S-2027 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-2003 Baghouse at Plant 2.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

31. The owner/operator shall route all PM emissions, including PM10 emissions, from Source S-3001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-3001 Baghouse at Plant 3.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

32. The owner/operator of Plant 1 A-1009 Baghouse shall not exceed PM10 emissions of 0.0017 grains per dry standard cubic foot as determined by District-approved methods.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, BACT, Cumulative Increase]

SOURCE TEST REQUIREMENTS

33. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved PM10 source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the emissions limits in Parts 1 and 2 and grain loading limits in Part 32 and in Condition 24466, 24547, and 24548. The owner/operator shall repeat the source testing on an annual basis thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

34. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved CO source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the individual source (S-1001, S-2027, S-3001) CO limits in Conditions 24466, 24547, and 24548 as well as the facility-wide CO limit in Part 1. The owner/operator shall repeat the source testing on a biennial (occurring every two years) basis thereafter. `
[Basis: Regulations 2-6-423, 2-1-403, Cumulative Increase]

35. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator shall conduct District-approved source tests for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the HAP limits in Part 1. The owner/operator shall provide the steel production rate data during each source test in order to determine an emission factors for each test point. The owner/operator shall repeat the source testing once every 3 years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

36. No later than 120 days from the issuance of this SMOP or the date S-3001 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3001 EAF shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM to characterize the emissions from Plant 3 S-3001 EAF (post-modifications to improve capture efficiency). Test points should include the inlet to the baghouse (A-3001), the outlet from the baghouse and the melt shop roof vents. The owner/operator shall report the steel production rate during the test to the District in order to calculate emission factors for each test point.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

37. No later than 120 days from the issuance of this SMOP or the date S-3004 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 Shakeout shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs (contained in Reg. 2, Rule 5), benzene, formaldehyde and NMHC to characterize emissions separate from the S-3019 Pour Area and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007) and before and after the carbon bed (A-3008). The owner/operator shall provide to the District the amount of sand in the molds processed during the test in order to calculate emission factors.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

38. No later than 120 days from the issuance of this SMOP or the date S-3019 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3, S-3019, Pour Area shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize emissions separate from the S-3004 Shakeout and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007), and before and after the carbon bed (A-3008). The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test should include not only the pouring operation, but also a cooling period.
[Basis: Regulations 2-6-423, 2-1-403, 2-5]

~~39. No later than 120 days from the issuance of this SMOP or the date S-2029 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2029, Shell Mold Pouring Station shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2029 emissions separate from S-2031 Shake Out & Tray Sanding, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2029, but before the common ducting for the other sources. Testing should be done for the sand molds that are prepared using the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~40. No later than 120 days from the issuance of this SMOP or the date S-2031 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2031, Shakeout & Tray Sanding, shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2031 emissions separate from S-2029 Shell Mold Pouring Station, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2031, but before the common ducting for the other sources. Testing shall be conducted on sand molds that use the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of sand in the molds processed during the test in order to calculate emission factors.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~41. No later than 120 days from the issuance of this SMOP or the date S-2030 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2030, Cast Mold Cooling Room shall conduct a one-time source test for filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2030 emissions separate from S-2029 Shell Mold Pouring Station, S-2031 Shake Out & Tray Sanding and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2030, but before the common ducting for the other sources. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~42. No later than three years from the issuance of this SMOP or the date a source (S-1002, S-1003, S-1004) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 1, S-1002 (Pour Off Area), S-1003 (B Shake Out), and S-1004 (A Shake Out) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 1. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~43. No later than three years from the issuance of this SMOP or the date a source (S-2029, S-2030, S-2031) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2 S-2029 (Shell Mold Pouring Station), S-2030 (Cast Mold Cooling Room), and S-2031 (Shakeout & Tray Sanding) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions~~

from pouring, cooling, and shakeout operations at Plant 2. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter. [Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

44. No later than three years from the issuance of this SMOP or the date a source (S-3004, S-3019) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 (Casting Mold Shake Out Station) and S-3019 (Pouring and Cooling) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 3. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

45. The owner/operator of the facility shall conduct District-approved annual PM10 source tests at each baghouse upstream of each carbon adsorption system. In order to determine compliance with the control efficiencies used in Part 2, the owner/operator shall test the following points:

Plant 1: inlet and outlet of A-1001 and A-1008 and the outlet of A-1007
Plant 2: inlet and outlet of both A-2001 and A-2002 and the outlet of A-2007
Plant 3: inlet and outlet of both A-3003 and A-3007 and the outlet of A-3008
[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]

46. The owner/operator shall submit results of all source test required by this condition to the District staff no later than 60 days after the source test. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests and shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

SOURCE TEST FREQUENCY

47. The owner/operator of the facility shall conduct District approved PM10 source tests at each of the following baghouses per the frequencies specified below:

Annual Source Test Frequency
Plant 1 (A-1001, A-1004, and A-1009)
Plant 2 (A-2001, A-2002, A-2003)
Plant 3 (A-3001)

Once Every Three Years Source Test Frequency
Plant 1 (A-1002 and A-1008)
Plant 2 (A-2004 and A-2010)
Plant 3 (A-3002, A-3003, A-3006, and A-3007)

~~Once Every Five Years Source Test Frequency~~
~~Plant 1 (A-1003 and A-1006)~~
~~Plant 2 (A-2005)~~
~~Plant 3 (A-2004)~~

~~in order to determine compliance with the abatement efficiencies and/or grain loading contained in Part 2.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]~~

~~BAGHOUSE PRESSURE DROP MONITORING REQUIREMENTS~~

~~48. The owner/operator shall properly install and properly operate a device at each that measures the pressure drop across each of the following baghouses:~~

~~Plant 1: A-1001, A-1002, A-1003, A-1004, A-1006, A-1008, A-1009, and A-1010 Baghouses~~
~~Plant 2: A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, and A-2010 Baghouses~~
~~Plant 3: A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, and A-3007 Baghouses~~

~~The owner/operator shall check each measuring device for plugging at least once every three months. The owner/operator shall cease operation of any equipment abated by any of the abatement devices listed above, when the pressure drop measured across an associated baghouse is outside of the range identified in Part 50 and shall not commence operations, until the pressure drop range of the baghouse returns to compliance.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~49. The owner/operator of the facility shall check or inspect the pressure drop across the baghouse at the three plants daily to ensure proper operation.~~
~~[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]~~

~~50. The owner/operator shall not allow the pressure drop at any baghouse to exceed any of the following pressure ranges (inches water gauge):~~

~~Plant 1 Baghouses~~

~~Device~~	~~Minimum~~	~~Maximum~~
~~A-1007~~	~~1.0~~	~~9.0~~
~~A-1002~~	~~[TBD]~~	~~[TBD]~~
~~A-1003~~	~~[TBD]~~	~~[TBD]~~
~~A-1004~~	~~[TBD]~~	~~[TBD]~~
~~A-1006~~	~~[TBD]~~	~~[TBD]~~
~~A-1008~~	~~1.0~~	~~5.0~~
~~A-1009~~	~~2.0~~	~~12.0~~
~~A-1010~~	~~0.0~~	~~4.0~~

~~Plant 2 Baghouses~~

~~Device~~	~~Minimum~~	~~Maximum~~	
~~A-2001~~	~~1.0~~	~~9.0~~	~~7 sections and 7 pressure differential gauges~~
~~A-2002~~	~~1.0~~	~~9.0~~	
~~A-2003~~	~~1.0~~	~~9.0~~	~~4 sections and 4 pressure differential gauges~~
~~A-2004~~	~~1.0~~	~~9.0~~	
~~A-2005~~	~~1.0~~	~~9.0~~	

A-2006	1.0	9.0
A-2010	1.0	6.0

Plant 3 Baghouses

Device	Minimum	Maximum
A-3001	2.0	12.0
A-3002	1.0	9.0
A-3003	4.5	7.0
A-3004	1.0	7.0
A-3005	0.0	2.0
A-3006	1.0	9.0
A-3007	4.5	7.0

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

51. The owner/operator of the facility shall check or inspect all baghouses at the three plants daily for evidence of particulate breakthrough. If breakthrough is evident from plume observations, dust buildup near the stack outlet, or abnormal pressure drops, the filter bags shall be checked for any tears, holes, abrasions, and scuffs, and replaced as needed.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

52. The owner/operator of the facility shall maintain and operate at sufficient intervals the pulsejet cleaning system to maintain compliance with Part 2 above.
[Basis: Regulations 2-6-423, 2-1-403]

BROKEN BAG DETECTORS

53. No later than 180 days from the issuance of the SMOP, the owner/operator shall properly install and properly operate a District approved broken bag detection device, unless it is determined by the District not to be technologically feasible, then the owner/operator shall properly install and properly operate a District-approved alternative continuous monitoring and recording device, that shall trigger an audible alarm when a preset level is exceeded, on each of the following baghouses:

Plant 1: A-1001, A-1008, and A-1009 Baghouses
Plant 2: A-2001, A-2002, and A-2003 Baghouses
Plant 3: A-3001, A-3003, and A-3007 Baghouses

The owner/operator shall cease operation of all equipment abated by any of abatement devices listed above, when an associated alarm is triggered, until a District-approved corrective action has been taken. The owner/operator shall only operate these baghouses in compliance with the set pressure ranges.
[Basis: Regulations 6-1-301, 6-1-310, 6-1-311, 2-1-403, 2-6-423]

ODOR MANAGEMENT PLAN

54. The owner/operator shall comply at all times with Sections 1 through 6 of the October 3, 2008 Odor Management Plan (OMP) as may be amended from time to time and approved by the APCO. The owner/operator shall submit amendments to the OMP within 30 days after the issuance of either an Authority to Construct (or a Permit to Operate if an Authority to Construct is not required) relating to the OMP.
[Basis: Regulations 2-1-403 and 2-6-423]

RECORDKEEPING SECTION

REPORTING NON-COMPLIANCE AND REQUIRED CORRECTIVE ACTION

55. The owner/operator shall report non-compliance with any permit condition in writing to the Director of Compliance and Enforcement with a copy to the Director of Engineering within 10 calendar days of discovery of non-compliance. The report shall describe the incident and any corrective action taken to address the incident and to assure future compliance with the permit condition. [Basis: Regulation 2-6-423, 2-1-403]

If the corrective action proposed to be taken is to modify the applicable limit set forth in Parts 1, 2, 6, 10, 11, 12, 13, or 14, the owner/operator shall submit a permit application within 30 days of the date of discovery to modify that limit.

QUARTERLY REPORTING

56. In order to demonstrate compliance with Parts 1 and 2, the owner/operator shall submit a District approved quarterly throughput and emissions report within thirty days of the end of the previous calendar quarter. The report shall provide the information listed below with supporting documentation for each of the previous three months, the previous calendar quarter and the previous consecutive twelve month period. The owner/operator shall calculate the consecutive 12-month emissions estimates using the actual throughputs and District-approved emissions factors and assumptions contained in Part 2. The report shall include:

a. Monthly throughputs from all sources contained in Part 2.
b. Total Plant 1 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
c. Total Plant 2 emissions POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
d. Total Plant 3 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
e. Total facility emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons.
f. All FID inlet and outlet monitoring data for the carbon adsorption abatement system and/or carbon beds for each plant.
g. For each plant, the cumulative total hydrocarbon (THC) mass emissions for each carbon cycle, measured at the inlet of each carbon adsorption system that is required to have a THC mass emissions monitoring device pursuant to Part 6.
h. Carbon control efficiencies corresponding to the 90-minute averages for each of the carbon adsorption abatement systems as determined by the FID monitoring systems.
i. For each plant's carbon adsorption system, the average control efficiencies averaged over each carbon cycle as determined by the FID monitoring systems.
j. The control efficiencies determined in Part 13.
k. Dates and amounts of each carbon replacement as required by Parts 10, 11, and 12.
l. Combined facility aerosol paint spray can usage in gallons and emissions in pounds or tons. The POC emissions shall be included with the emissions estimates in Part 3 in order to demonstrate compliance with the POC emission limit contained in Part 1a.
m. All material safety data sheets for all aerosol spray paints used during the previous quarterly period if either the MSDS has changed since the previous MSDS submittal for that aerosol spray paint or the owner or operator has not used such aerosol spray paint within the past five years and identification of all materials used including quantities of each material.
n. Cumulative steel production rates for the previous quarter and consecutive 12-month period at each facility.

The owner/operator shall submit the report to the Director of Engineering with a copy to the Director of Compliance & Enforcement. The owner/operator shall follow the reporting procedure outlined in Part 55 for any discovery of non-compliance or potential non-compliance.

The owner/operator shall retain all quarterly throughput and emissions reports and accompanying documentation at the facility for five years from the date of the report. The owner/operator will make the reports and accompanying documentation available for inspection by District staff upon request. [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

DAILY RECORDKEEPING

57. In order to demonstrate compliance with the above permit conditions, the owner/operator of the facility shall maintain the following **production/emissions-related information** in a District-approved daily log:

a. In order to demonstrate compliance with Parts 1, 2, and 10 through 14, carbon capture efficiency records for each source contained in Part 2, in the units used in Part 2, with monthly summaries and consecutive 12-month totals
b. The total amount of steel throughput at each plant in tons at each plant
c. The total amount of binder and catalyst usage in tons at each plant
d. The total amount of coated sand usage in tons at each plant
e. The total amount of pre-coated sand usage in tons at each plant
f. The total amount of stainless steel castings produced in tons at each plant
g. Time of first casting poured and last casting poured at each plant
h. Start and end times of shakeout at each plant

All records shall be retained on site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. [Basis: Cumulative Increase, Regulation 1-441]

FID/CARBON ADSORPTION/ODOR-RELATED RECORD KEEPING

58. In order to demonstrate compliance with the above permit conditions, the owner/operator shall maintain the following **FID/Carbon Adsorption/Odor-related information** in a District-approved daily log:

a. The most recent odor panel results in units of DTT for each carbon bed and/or system.
b. FID system bias determination of the sampling/analysis system and the time and date it was established at each carbon bed and/or system.
c. All pressure drop data across each carbon bed or carbon adsorption system.
d. The inlet temperature to each carbon adsorption system carbon bed.
e. Results of all source testing and inlet velocity testing.
f. FID 90-minute and one-minute average total hydrocarbon (THC) concentrations from both the inlet and outlet of each carbon adsorption system carbon bed, as ppm C1.
g. FID daily and cumulative hydrocarbon mass emissions at both the inlet and outlet of each carbon adsorption system carbon bed.
h. At the request of the APCO, make monitoring data available within 30 days following the replacement of carbon at each carbon adsorption system.
i. Carbon-cycle basis abatement efficiency of each carbon adsorption system carbon bed.
j. Daily carbon control efficiency, mass emissions at both the inlet and outlet for the purposes of determining carbon breakthrough and compliance per Parts 10 through 14.

k. The date that carbon change-outs occur and the steel throughput in tons between carbon change-outs for each plant.
l. Any carbon adsorption system's non-operation times lasting more than one hour.
m. Carbon prefilter change-outs for each carbon bed or system at each plant.
n. Manometer readings for each of the carbon prefilters at each plant.
o. Records that demonstrate that the owner/operator timely ordered the replacement carbon to demonstrate compliance with Part 14.
p. All source test data and results for each plants.
q. All records required per Parts 14 and 15.
r. Records of maintenance and repairs, including the date of discovery of the breakdown, and the date and nature of the repair, as required by Part 8.
s. Records to verify daily FID system calibrations.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, Regulation 1-441]

DAILY BAGHOUSE RECORD KEEPING

59. In order to demonstrate compliance with the above permit conditions, the owner/operator of the facility shall maintain the following **baghouse monitoring information** in a District-approved daily log:

a. Records of all inspections and all maintenance work including bag replacements for each baghouse. Records of each inspection shall consist of a District-approved log containing the date of inspection and the initials of the personnel that inspects each of the above baghouses.
b. The pressure drop records across all baghouses as required by Parts 49 and 50 above.
c. In order to demonstrate compliance with Part 53, the time, date, and duration of each broken bag leak detector alarm event and the corrective action taken.
d. All source test data and results for each plants.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, 1-441]

60. The owner/operator shall submit an annual compliance certification report to both the Director of Engineering and Director of Compliance & Enforcement consistent with requirements of 2-6-426. The owner/operator shall certify the facility's compliance with the requirements of all parts, including Parts 1, 2, 10, 11, 12, and 13. The annual report shall specifically include all emissions-related information including, but not limited to, throughput, capture/control efficiencies, and emissions factors. If during the certification review, the owner/operator determines that any of the emissions-related items listed above are no longer accurate, or are underestimating the emissions from any source, then the owner/operator shall submit a completed permit application to the District within 30 days of either the annual compliance certification notice or any monitoring data throughout the year that indicates inaccurate or underestimated emissions from the source, such as FID or source test data.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, 1-441]

Condition # 20207:

Pacific Steel Casting (PSC) Plants 1, 2, and 3 (collectively District Plant # 22605), have a synthetic minor operating permit (SMOP). This SMOP covers all sources at the facility as of the date of permit issuance.

These conditions establish the permit terms that ensure this plant is classified as a Synthetic Minor Facility under District Regulation 2, Rule 6 - Major Facility Review and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. All applications submitted by the applicant and all modifications to the facility's equipment after issuance of this SMOP must be evaluated to ensure that the facility will not exceed the synthetic minor operating permit limits below and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this facility's status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a Synthetic Minor must undergo the procedures specified by Rule 2-6, Section 423. The basis for the synthetic minor conditions is an emission limit for each regulated air pollutant of less than 90 tons per year at the facility, an emission limit for a single hazardous air pollutant of less than 9 tons per year at the facility, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year at the facility.

The District's SMOP contains adequate monitoring to enable the District to verify compliance with the SMOP emissions limits.

Pacific Steel Casting is considered a synthetic minor source for the CO, PM10, PM2.5, VOC and SO2 and a natural minor source for NOx and HAPs.

1. General Conditions

1.1 For purposes of this permit, the permitted source consists of the following equipment and/or activities. The information in this table is for descriptive purposes only.

The permitted sources (S-#) at Plant 1 on the date of issuance of this synthetic minor permit are:

1001 ARC FURNACE
1002 POUR-OFF AREA
1003 B SHAKE OUT (DUST COLLECTION)
1004 A SHAKE OUT (DUST COLLECTION)
1005 SAND SYSTEM (DUST COLLECTION)W/WHIRL AIR FLOW SYSTEM
1006 SAND COOLER,6 SCREEN,W/MOLD RELEASE COATING OPERATION
1007 SAND SCREEN
1008 MULLER
1010 MULLER, CORE SAND
1011 MULLER
1012 CLEANING & GRINDING DEPT.
1013 ARC-AIR BOOTH
1014 ARC-AIR BOOTH
1015 PANGBORN TABLE BLAST
1016 ROTO-BLAST
1017 ROTOBLAST
1018 HEAT TREATING FURNACES
1019 RAW SAND RECEIVING
1022 CORE BAKE OVENS

1027 Core-Making Operation
32001 MINOR SOURCES

The permitted abatement devices (A-#) at Plant 1 on the date of issuance of this synthetic minor permit are:

1001 BAGHOUSE # 1
1002 BAGHOUSE # 2
1003 BAGHOUSE # 3
1004 BAGHOUSE # 4
1006 BAGHOUSE # 5A
1007 CARBON ADSORPTION SYSTEM
1008 BAGHOUSE, CARTRIDGE
1009 BAGHOUSE
1010 BAGHOUSE CORE SAND # 9

The permitted sources (S-#) at Plant 2 on the date of issuance of this synthetic minor permit are:

2001 SAND SILO LOADING ELEVATOR
2002 SAND SILO #1
2003 SAND SILO #2
2004 BUCKET ELEVATOR
2005 RESIN TANK (LIQUI-BIN)
2006 SAND HEATER
2007 SAND COATING
2008 COATED SAND PUG MILL
2009 COATED SAND VIBRATING SCREEN
2010 BUCKET ELEVATOR
2011 COOLING TOWER, COATED SAND
2012 BUCKET ELEVATOR
2013 CORE MOLDING MACHINE [EXEMPT]
2014 CORE MOLDING MACHINE [EXEMPT]
2015 CORE MOLDING MACHINE [EXEMPT]
2016 CORE MOLDING MACHINE [EXEMPT]
2017 CORE MOLDING MACHINE [EXEMPT]
2018 CORE MOLDING MACHINE [EXEMPT]
2019 COATED SAND BIN
2020 SHELL MOLDING MACHINE, SINGLE [EXEMPT]
2021 SHELL MOLDING MACHINE, TWIN [EXEMPT]
2022 SHELL MOLDING MACHINE, TWIN [EXEMPT]
2023 SHELL MOLDING MACHINE, TWIN [EXEMPT]
2024 SHELL MOLDING MACHINE, SINGLE [EXEMPT]
2025 ABRASIVE BLASTER, CORE AREA [EXEMPT]
2026 LARGE LADLE HEATER
2027 ELECTRIC ARC FURNACE

2028 EAF LADLE STATION W/CANOPY HOOD
2029 SHELL MOLD POURING STATION
2030 CAST MOLD COOLING ROOM
2031 SHAKEOUT & TRAY SANDING
2032 ROTOBLAST
2033 ABRASIVE CUT-OFF SAW [EXEMPT]
2034 ABRASIVE CUT OFF SAW [EXEMPT]
2035 ABRASIVE CUT-OFF SAW [EXEMPT]
2036 ABRASIVE CUT-OFF SAW [EXEMPT]
2037 GRINDER [EXEMPT]
2038 GRINDER [EXEMPT]
2039 GRINDER [EXEMPT]
2040 GRINDER [EXEMPT]
2044 SAND STORAGE SILO
2045 LUMP BREAKER
2046 FLOW BIN (REJECTED MATERIAL)
2047 SAND COOLER/AIR BED #1 (C-1)
2048 MATERIAL HANDLING EQUIPMENT (3 HOPPERS,3 BUCKET ELEVS, ONE TRUCK
2049 (R-1), THERMAL RECYCLING UNIT (SAND RECLAMATION)
32000 MISCELLANEOUS MINOR SOURCES [EXEMPT]

The permitted abatement devices (A-#) at Plant 2 on the date of issuance of this synthetic minor permit are:

2001 BAGHOUSE # 1
2002 BAGHOUSE # 2
2003 BAGHOUSE # 3
2004 BAGHOUSE # 4
2005 BAGHOUSE # 5
2006 BAG FILTER
2007 CARBON ADSORPTION SYSTEM
2010 PULSE JET BAG HOUSE DUST COLLECTOR

The permitted sources (S-#) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 ELECTRIC ARC FURNACE
3002 LADLE HEATER [EXEMPT]
3004 CASTING MOLD SHAKE OUT STATION
3005 BLAST TABLE
3006 TUMBLE BLAST
3007 NEW SAND SILO #1
3009 SAND COOLER CLASSIFIER
3010 SAND CONDITIONING UNIT #1
3011 SAND CONDITIONING UNIT #2
3012 RETURN SAND BIN #1

3013 RECLAIMED SAND BIN #2
3014 MIXER SAND BIN
3015 NEW SAND RECEIVING BUCKET ELEVATOR #1
3016 BUCKET ELEVATOR #2 RETURNED SAND
3017 BUCKET ELEVATOR #3 RECLAIMED SAND
3018 MOLD COATING OPERATION
3019 POURING AND COOLING
3020 HOLCOTE 578 CCD COATING

The permitted abatement devices (A-#) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 EAF BAGHOUSE
3002 CLEANING ROOM BAGHOUSE # 1
3003 SHAKE OUT BAGHOUSE # 1
3004 SAND SYSTEM BAGHOUSE
3005 MIXER SAND BIN DUST FILTER
3006 CLEANING ROOM BAGHOUSE # 2
3007 SHAKEOUT BAGHOUSE # 2
3008 CARBON ADSORPTION SYSTEM & DUCTING

1.2 The owner/operator shall comply with Conditions 24466 (Plant 1), 24548 (Plant 2), and 24547 (Plant 3) at all times of operation. Condition 20207, 24466, 24547, and 24548 constitute the Synthetic Minor Operating Permit for the facility and a violation of any part of Conditions 20207, 24466, 24548, or 24547 shall be considered a violation of the Synthetic Minor Operating Permit.
[Basis: Regulation 2-6-423]

2. Acronyms, Abbreviations, Definitions & Units

For the purposes of these SMOP conditions, the following terms have the following meanings:

"**facility**" shall mean and comprise Plants 1, 2, and 3;

"**owner/operator**" shall mean the owner or operator of the facility;

"**operations**" shall mean and include material handling, mixing, mold making activities, melting, pouring, cooling, shakeout, grinding, and sand recycling;

"**operational hour**s" shall mean those periods of time during which material handling, mixing, mold making activities, melting, pouring, cooling, or shakeout operations are taking place at a facility plant;

"**cooling operations**" shall mean the period of time commencing with the pouring of casting and concluding with the commencement of shakeout operations at a plant;

"**shakeout operations**" shall mean the period of time commencing with any separation of the casting from the mold and ends with a complete removal of the casting from the shakeout station with all of the sand from the mold contained in the shakeout operation;

"**carbon cycle**" at a plant shall mean the commencement of carbon adsorption system operation with a fresh batch of carbon through the last day of operation with that same batch of carbon.

"**maintain**" shall mean maintain and keep in good repair at all times.

"**District-approved**" shall mean the following depending on the context:

- **"source tests"** shall mean source tests that met the requirements of these conditions and of District Manual of Procedures Volume IV (Source Test Policy and Procedures) using EPA-approved source test methods

- **"source test results**" shall mean results from a District-approved source test that have been reviewed and approved by the District's Source Test Section and Engineering Division

- **"corrective action**" shall mean an action that brings the facility into compliance with an associated requirement and that has been reviewed and approved by the District's Enforcement Division. Such an action shall identify and eliminate the cause(s) of the non-complying occurrence to prevent recurrence.

- **"instrument**" shall mean a device capable of detecting and measuring air velocity with a minimum resolution of one foot per minute that is properly operated and maintained according to manufacturer specifications. Such a device shall be reviewed and approved by the District's Enforcement Division.

- "**FID**" shall mean a flame ionization device that meets the requirements listed in EPA Performance Specification 8A as well as the District's Manual of Procedures Volume V (Continuous Emission Monitoring Policy and Procedures) and that has been reviewed and approved by the District's Source Test Section and Engineering Division.

- "**broken bag device**" shall mean a device that satisfies the requirements of Title 40 CFR Part 60 Subpart AA and that has been reviewed and approved by the District's Source Test Section and Enforcement and Engineering Divisions.

- "**alternative continuous monitoring and recording device**" shall mean a device that is functionally equivalent to the in lieu of device and has equivalent or superior specifications regarding data quality capture, recording, and assurance that is reviewed and approved by the District's Enforcement, Engineering, and Technical Divisions.

- "**alternative continuous parametric emissions monitoring system**" shall mean a device that continuously measures process parameters and uses a computer model to estimate emissions based on the parameters measured. Used as an equivalent to direct measurement of emissions.

- "**log**" or "**logbook**" shall mean a physical or electronic record that captures the required information in the frequency specified (e.g. daily, monthly, quarterly) in a format approved by the District's Enforcement and/or Engineering Division. At a minimum, the record shall include the date of entry, source number(s) and description(s), required information, and name of the person recording the information. If in electronic form, the record shall include a mechanism for preventing editing after a record has been entered.

- "**report**" shall mean a standardized document that includes the requested information in a format reviewed and approved by the District's Enforcement and Engineering Divisions. At a minimum, the report should include the requested information in the frequency specified (e.g. daily, monthly, etc.) as well as the listing the name and title of the facility personnel responsible for the accuracy of the report.

- "**emission factors**" shall mean emission factors calculated per the requirements of this condition and that have been reviewed and approved by the District's Enforcement and Engineering Divisions

For the purposes of this SMOP, if two or more carbon beds together abate one or more sources, the carbon beds together constitute a "carbon adsorption system." If a single carbon bed abates a specific source or sources exclusively, that carbon bed constitutes a "carbon adsorption system" for the source or sources. The carbon adsorption systems at the facility are A-1007 at Plant 1, A-2007 at Plant 2, and A-3008 at Plant 3. Unless a permit condition refers to a specific carbon adsorption system at one of the plants, a reference to a carbon adsorption system means and applies to all of the carbon adsorption systems.

3. Emission Limits and Work Practice Requirements

3.1 At all times, including periods of startup, shutdown, maintenance and malfunction, the owner/operator shall, to the extent practicable, maintain and operate each source, including any associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions and considering the manufacturer's recommended operating procedures. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the District, which may include but is not limited to, monitoring results, review of operating and maintenance procedures and inspection of the source.

[Basis: Regulation 2-6-423, 2-1-403, Synthetic Minor]

3.2 The owner/operator shall not allow the facility to exceed any of the following emission limits in any consecutive 12-month period:

a. 90 tons of any regulated air pollutant including, but not limited to: precursor organic compounds (POC), carbon monoxide (CO), particulate matter less than 10 microns (PM_{10}), sulfur dioxide (SO_2), and oxides of nitrogen (NO_X), but not including hazardous air pollutants (HAPs);

b. 9 tons of any single HAP, and

c. 23 tons of any combination of HAPs.

The emission limits listed above apply to emissions from all equipment covered by the permit, including emissions during startup periods, shutdown periods, and during periods of malfunction or upset.

[Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

3.3 The owner/operator shall not allow the facility to exceed any of the throughputs, emissions factors, and/or emissions specified in these SMOP conditions as well as SMOP Conditions 24466 (Plant 1), 24548 (Plant 2), and 24547 (Plant 3). All data and assumptions contained in this part as well as Conditions 24466, 24547, and 24548 shall be considered enforceable limits. The compliance demonstration for the emissions limits listed in Part 3.2 shall include emissions from all equipment covered by the permit, including emissions during startup periods, shutdown periods, and periods of malfunction or upset.

[Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

EMISSION CALCULATIONS

3.4 To demonstrate compliance with the criteria pollutant emissions limits in Parts 3.2 and 3.3, the owner/operator shall determine the facility rolling 12-month emissions by calculating the emissions (tons/month) for each source for each month and adding the emissions for the previous eleven months.

The owner/operator shall determine monthly emissions (tons/month) for each source by using the following equations:

a. For sources, other than S-2005, with emission factors in units of lbs per gallon, the owner/operator shall calculate pre-control emissions using the following equation:

Pre-Control Monthly Emissions (tons/month) = $[\sum_{i=1}^{n}(Vol_i) \times (D_i) \times (W_i)]/2000$

where:

Vol_i = monthly volume (gallon/month) of each coating, sealant, solvent and ink used

D_i = density (lb/gallon) of each coating, sealant, solvent and ink

W_i = mass fraction (lb/lb) of pollutant in each coating, sealant, solvent and ink

n = number of coatings, sealants, solvents and inks used each month

b. For Source 2005 (Resin Tank), the owner/operator shall calculate emissions using the equations listed in EPA's AP 42, Fifth Edition, Volume 1, Section 7.1 (Organic Liquid Storage Tanks), Subsection 7.1.3.1 (Total Losses From Fixed Roof Tanks), dated November 2006.

c. For sources with emission factors in units of lbs per therm, the owner/operator shall calculate pre-control emissions using the following equation:

Pre-Control Monthly Emissions (tons/month) = [(NG) x (HHV) x (0.00001) x (EF)]/2000

where:

NG = scf of natural gas combusted in source each month

HHV = higher heating value for natural gas (assume 1020 unless measured)

0.00001 = conversion factor (1 therm/100,000 Btu)

EF = pollutant emission factor (lbs/therm)

d. For sources with emission factors in units of lbs per ton of steel or lbs per ton of sand, the owner/operator shall calculate pre-control emissions using the following equation:

Pre-Control Monthly Emissions (tons/month) = [(Throughput) x (EF)]/2000

where:

Throughput = monthly throughput (tons sand or steel)

EF = pollutant emission factor (lbs/ton sand or steel)

e. For sources where THC emissions are continuously measured using a flame ionization device (FID), the owner/operator shall calculate emissions using the following equation:

Emissions (tons) = [(PPM/1,000,000) x (MM/MV) x (DCFM) x (MIN)]/2000

where:

PPM = total hydrocarbons concentration (parts per million)

MM = molar mass (lb/lb-mol), assume 12 (for carbon) unless otherwise measured

MV = molar volume (cubic feet/lb-mol), use 386 (21 deg Celsius, 14.7 psia)

DCFM = exhaust flow rate (dry standard cubic feet per minute at 21 deg Celsius, 14.7 psia)

MIN = number of minutes between FID measurements

During periods where a FID has malfunctioned, the owner/operator shall substitute the PPM reading in the above equation using the following procedure based on data availability:

Data Availability	Substitution Procedure
> 90 percent	Use average of the hour before and hour after missing period
< 90 percent	Maximum recorded during previous 720 quality-assured monitor operating hours

f. For sources where emissions of a pollutant are not controlled, the emissions shall be the "pre-control emissions" calculated using an equation per parts a through e. For sources where emissions of a pollutant are controlled, the owner/operator shall calculate total emissions (post-control and fugitive) of that pollutant from a source using the following equations:

Total Monthly Emissions = Post-Control Emissions + Fugitive Emissions

Post-Control Emissions = (CAP) x (1 – CF) x Pre-Control Emissions
Fugitive Emissions = (1 – CAP) x Pre-Control Emissions
where:
CAP = Capture Efficiency (Percentage/100)
CF = Control Efficiency (Percentage/100)

g. For sources that have emission factors in more than one units (e.g. lbs/gallon and lbs/ton sand or lb/ton steel), the owner/operator shall calculate emissions using all applicable emission factors and sum them to determine the total emissions for the source.

h. For total facility emissions, the owner/operator shall calculate total facility emissions (tons/month) by summing all individual source emissions (tons/month).

[Basis: 2-6-423, 2-1-403, Synthetic Minor]

EMISSION FACTORS

3.5 For sources where emissions are calculated using an emission factor per Part 3.4, the owner/operator shall calculate emissions using the emission factors listed in Conditions 24466 (Plant # 1 sources), 24547 (Plant # 3 sources), and 24548 (Plant # 2 sources) or emission factors derived from periodic source tests or emissions monitoring for each pollutant.

a. For sources with emission factors in units of lbs per therm, the owner/operator shall derive an emission factor from District-approved source test results using the following equation:

Emission Factor (lbs/therm) = [(ER) x (100,000)]/[(NG) x (HHV)]
where:
ER = average emission rate (lbs/hour) during source test
NG = average amount (scf) of natural gas combusted per hour during source test
HHV = higher heating value for natural gas (assume 1020 unless measured)
100,000 = conversion factor (100,000 Btu/therm)

b. For sources with emission factors in units of lbs per ton of steel or lbs per ton of sand, the owner/operator shall derive an emission factor from District-approved source test results using the following equation:

Emission Factor (lbs/ton sand or steel) = (ER)/(Throughput)

where:

ER = average emission rate (lbs/hour) during source test

Throughput = average throughput (tons sand or steel) per hour during source test

[Basis: 2-6-423, 2-1-403]

CARBON ABATEMENT

3.6 The owner/operator shall properly maintain all carbon adsorption systems and keep all the carbon adsorption systems in good repair at all times in accordance with the manufacturer's specifications and in a manner to assure that both the carbon adsorption systems and the abated sources remain in compliance with this SMOP.

[Basis: Cumulative Increase, Regulation 2-1-403]

3.7 Within 30 days of the issuance of this SMOP and until installation of flame ionization detectors (FIDs) at each carbon adsorption system (pursuant to Part 4.2 below), the owner/operator shall operate the carbon adsorption systems at A-1007 at Plant 1 and A-2007 at Plant 2 in a manner to prevent carbon breakthrough as defined in this Part 3.7.

a. If carbon breakthrough occurs at one of the carbon adsorption systems, the owner/operator shall cease all mixing, pouring, and/or shakeout operations at the respective plant where carbon breakthrough has occurred, until the carbon is replaced in accordance with Part 3.7b.

b. The owner/operator shall replace all carbon at that carbon adsorption system with fresh carbon no later than 24 hours after carbon breakthrough has occurred. If the owner/operator has poured a mold less than 24 hours after carbon breakthrough, then the owner/operator shall continue to abate the cooling operation for a minimum of 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.

For purposes of this Part 3.7 only, "carbon breakthrough" shall be defined as not achieving a minimum control efficiency of 88.0 percent by weight as determined by daily hydrocarbon sampling (per Part 4.4) at each carbon adsorption system at all times the system is in operation. The "carbon cycle" shall be defined as the period from installation of a fresh load of carbon at the carbon adsorption system until carbon breakthrough.

[Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

3.8 The owner/operator shall properly operate A-3008 at Plant 3 at all times during any mixing, pouring, cooling, and/or shakeout operations at S-3019 Pouring and Cooling Area, S-3004 Shakeout Station, and/or S-3014 Mixer. If carbon breakthrough, as defined below, occurs at A-3008, the owner/operator shall cease immediately all mixing, pouring and shakeout operations at Plant 3. The owner/operator shall replace all carbon in A-3008 at Plant 3 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below. If a pouring operation has occurred within the previous 24

hours of carbon breakthrough, the owner/operator shall not replace the carbon until A-3008 has abated the emissions from the cooling molds/castings for at least 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.

For the purposes of this SMOP "carbon breakthrough" for A-3008 at Plant 3 occurs when any one of the following conditions exists at A-3008:

i. the inlet total hydrocarbon (THC) loading is greater than or equal to 220 pounds per calendar day, the abatement efficiency is less than 88.0 % by weight averaged over the twenty-four period of each calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds, or

ii. the inlet THC loading is less than 220 pounds per calendar day, the outlet THC emissions are greater than or equal to 55 pounds per calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds.

The owner/operator shall not exceed an inlet THC loading that measures or exceeds 15,000 pounds.

[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

3.9 The owner/operator of the facility's FID systems shall:

a. Properly maintain the FID systems and keep the FID systems in good repair;

b. Repair FID monitors expeditiously, which shall be no later than 24 hours after discovery of a FID-related malfunction;

c. Calibrate each FID at least once on each day of operation of the respective carbon adsorption system and re-calibrate each FID following its repair or maintenance;

d. Maintain monitors to be accurate within 20 percent when compared with a reference test method or within 10 percent of the applicable standard including the limits contained within these conditions;

e. Replace or clean FID system tubing during carbon change-out of the FID's respective carbon adsorption system in order to minimize FID system bias; and

f. Establish FID system bias weekly using hydrocarbon-free air or zero gas introduced to the probe tip. The system bias shall be used until the next system bias is determined. The owner/operator shall maintain the system bias to less than 30 ppmv THC as C1.

g. Use data substation for periods where a FID has malfunction.

[Basis: Regulations 1-523, 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

3.10 The owner/operator shall properly operate A-1007 at Plant 1 at all times during the operation of any or all of S-1002 Pour Off Area, including cooling operations; S-1003 B Shakeout; S-1004 A Shakeout; A-1001 Baghouse; and A-1008 Baghouse. If carbon breakthrough, as defined below occurs at A-1007, the owner/operator shall cease immediately all pouring and shakeout operations at Plant 1. Furthermore, the owner/operator shall replace all carbon in A-1007 at Plant 1 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

Breakthrough definition will be determined within permit applications required to be submitted as specified in Part 5.6.

[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

3.11 The owner/operator shall properly operate A-2007 at Plant 2 at all times during the operation of any or all of S-2022, S-2023, S-2026, S-2029, S-2030, S-2031, S-2032, A-2001, and A-2002. If carbon breakthrough, as defined below, occurs at A-2007, the owner/operator shall cease immediately all

pouring and shakeout at Plant 2. Furthermore, the owner/operator shall replace all carbon in A-2007 at Plant 2 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

Breakthrough definition will be determined within applications required to be submitted as specified in Part 5.6

[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

3.12 The owner/operator shall operate each carbon adsorption system (A-1007, A-2007, A-3008) to achieve a "minimum control efficiency," of at least 90.5% by weight on a carbon cycle basis. For the purposes of this SMOP, a carbon cycle commences on the date of installation of a load of "fresh" carbon at the carbon adsorption system through the date of removal of that load as "spent" carbon. The owner/operator shall demonstrate compliance with the "minimum control efficiency" through the use of the FID data on each carbon adsorption system's inlet and outlet concentration measurements and verified on a carbon cycle basis. If the owner/operator discovers that a carbon adsorption system has failed to meet the "minimum control efficiency," the owner/operator shall report the non-compliance in accordance with Part 5.13.

[Basis: Regulations 2-6-423, 2-1-403, 2-5]

3.13 The owner/operator shall have on-site a full replacement load of fresh carbon for carbon change out at A-1007, A-2007, or A-3008 no later than five business days following carbon replacement at A-1007, A-2007, or A-3008.

The following is considered full replacement load for each carbon abatement device:

A-1007	12,350 lbs/carbon bed	37,000 lbs/three carbon beds
A-2007	9,667 lbs/carbon bed	29,000 lbs/three carbon beds
A-3008	52,000 lbs/carbon	

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

3.14 The owner/operator of Plant 1, 2, and 3 shall properly install and properly operate both audible and visual alarms to be triggered at carbon breakthrough as defined in Part 3.8, 3.10, and/or 3.11.

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

3.15 The owner/operator shall not operate the carbon adsorption systems in a manner such that the outlet THC concentration exceeds the inlet THC concentration measured as C1 by the FIDs.

[Basis: Regulation 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

BAGHOUSE ABATEMENT

3.16 The owner/operator shall cease all pouring and shakeout operations whenever the pressure drop across each carbon adsorption system carbon bed that abates the respective pouring and shakeout operations is lower than one inch water gauge and greater than nine inches water gauge.

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

3.17 The owner/operator shall not allow the pressure drop at any baghouse to exceed any of the following pressure ranges (inches water gauge):

Plant 1 Baghouses

Device	Minimum	Maximum	
A-1007	1.0	9.0	
A-1002	[TBD]	[TBD]	no device currently installed
A-1003	[TBD]	[TBD]	no device currently installed
A-1004	[TBD]	[TBD]	no device currently installed
A-1006	[TBD]	[TBD]	no device currently installed
A-1008	1.0	5.0	
A-1009	2.0	12.0	
A-1010	0.0	4.0	

Plant 2 Baghouses

Device	Minimum	Maximum	
A-2001	1.0	9.0	7 sections and 7 pressure differential gauges
A-2002	1.0	9.0	
A-2003	1.0	9.0	4 sections and 4 pressure differential gauges
A-2004	1.0	9.0	
A-2005	1.0	9.0	
A-2006	1.0	9.0	
A-2010	1.0	6.0	

Plant 3 Baghouses

Device	Minimum	Maximum
A-3001	2.0	12.0
A-3002	1.0	9.0
A-3003	4.5	7.0
A-3004	1.0	7.0
A-3005	0.0	2.0
A-3006	1.0	9.0
A-3007	4.5	7.0

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

3.18 The owner/operator of the facility shall maintain and operate at sufficient intervals the pulsejet cleaning system to maintain compliance with Part 3.2 above.
[Basis: Regulations 2-6-423, 2-1-403]

3.19 The owner/operator shall cease operation of all equipment abated by any of abatement devices listed in Part 4.8, when an associated alarm is triggered, until a District-approved corrective action has been taken. The owner/operator shall only operate these baghouses in compliance with the set pressure ranges.
[Basis: Regulations 6-1-301, 6-1-310, 6-1-311, 2-1-403, 2-6-423]

MATERIAL USAGE

3.20 The owner/operator shall not change materials that may increase either VOC and/or HAP emissions, or result in the emissions of a toxic air contaminant not previously emitted, without obtaining prior approval of an application for the revision from the District Engineering Division. Any change in materials shall be submitted on a Data Form X with an attached MSDS. The owner/operator of this facility (including Plants 1, 2, and 3) shall not use any materials containing chlorinated compounds without obtaining prior approval from the District Engineering Division.

[Basis: Regulations 2-1-301, 7, 1-301, 2-5, Cumulative Increase]

3.21 The owner/operator shall not use purchased pre-coated sand at Plant 3.

[Basis: Regulation 2-5, Cumulative Increase]

CAPTURE EFFICIENCY

3.22 The owner/operator shall conduct all furnaces, pouring, cooling, shakeout, and scrap and charge handling in a total enclosure. The owner/operator shall comply with all of the following requirements to maintain the entire building of each plant and new addition, other than the main office area, as a total enclosure.

a. The owner/operator shall maintain a negative pressure at each of the plant's exterior doors, windows, and other openings as identified and required within the facility's Regulation 12, Rule 13 Emissions Minimization Plan.

b. The owner/operator shall maintain in inward flow of air through all natural draft openings.

c. The owner/operator shall maintain all other openings or doors leading to/from the total enclosure closed except for during use, or equip the openings with overlapping strip doors or air curtains.

d. The owner/operator shall ventilate the total enclosure continuously to ensure negative pressure values of at least 0.007 inches of water is maintained at all times.

e. The owner/operator shall maintain the inlet face velocity at each exterior opening at a minimum of 200 feet per minute.

f. The owner/operator shall use a District-approved instrument to measure the face velocity of each opening of a plant for which a source is operating. The owner/operator shall measure the face velocity of each facility exterior opening at least once per operating day. The owner/operator is not required to measure the face velocity for a plant for which no source is operating and for which no mold is being cooled or material is being shaken out.

g. The owner/operator shall maintain a District-approved logbook of all face velocity measurements.

h. If the owner/operator cannot maintain the inlet face velocities of Part 3.22e for a plant, the owner/operator shall not commence shakeout operations at the respective plant's shakeout sources S-1003, S-1004, S-2031, and/or S-3004 until there is no casting that produces visible emissions as demonstrated using EPA Method 22 at the respective plant's pouring and cooling sources S-1002, S-2029, and/or S-3019.

i. The owner/operator shall maintain all exterior openings closed except during use, or equip the openings with overlapping strip doors or air curtains.

j. If the owner/operator installs air curtains, the air curtains shall be operated at all times that any of the pouring stations, furnaces, and scrap and charge handling equipment are in operation. The owner/operator shall maintain and operate all air curtains according to the manufacturer's specifications. The owner/operator shall conduct inspections at least once each calendar week, while the pouring stations, furnaces or scrap handling equipment is in operation, to determine if the air curtains are in operation as required by this condition. The owner/operator shall maintain a written record of the inspections and any corrective action taken.

k. If the owner/operator installs air curtains, the owner/operator shall post signs at each exit that has an air curtain that states that the air curtain must be operated at all times that any of the pouring stations, furnaces, or scrap handling equipment are in operation.

If the APCO determines that significant fugitive emissions are emitted from any source, the APCO may require the owner/operator to conduct tracer gas testing to demonstrate the capture efficiencies listed in Conditions 24466, 24547, and 24548.

[Basis: Regulations 2-1-403, 2-6-423, 12-13-403]

3.23 The owner/operator shall maintain a negative pressure at each of the plant's interior doors, windows, and other openings as identified and required within the facility's Regulation 12, Rule 13 Emissions Minimization Plan.

a. The owner/operator shall maintain the inlet face velocity at each interior opening at a minimum of 200 feet per minute.

b. If the owner/operator cannot maintain the inlet face velocities of Part 3.23a for a plant, the owner/operator shall not commence shakeout operations at the respective plant's shakeout sources S-1003, S-1004, S-2031, and/or S-3004 until there is no casting that produces visible emissions as demonstrated using EPA Method 22 at the respective plant's pouring and cooling sources S-1002, S-2029, and/or S-3019.

[Basis: Regulations 2-1-403, 2-6-423]

PLANT 1

3.24 The owner/operator of the Plant 1 S-1004 Line "A" deck conveyor system shall maintain all rubber/plastic strips in good condition and ensure that there are no missing rubber/plastic strips or damaged strips. The owner/operator shall not operate the S-1004 Shake Out if there is any missing or damaged rubber/plastic strips.

[Basis: Regulations 2-1-403, 2-6-423]

3.25 The owner/operator of Plant 1 S-1003 Shake Out shall not store or allow any open or cracked molds outside of the Plant 1 shakeout station, except as provided below for flasked molds. The owner/operator shall only open molds that are in the shakeout station, except that it may open flasked molds (unflasking) up to 5 minutes prior to placing the molds in the shakeout station. The owner/operator of Plant 1 S-1003 "Line B" shall not remove opened or cracked molds until shakeout is completed in the Shake Out Station. The owner/operator shall not cease shakeout until all castings in the shakeout station are removed from the molds.

[Basis: Regulations 2-1-403, 2-6-423]

3.26 The owner/operator shall abate all pouring and cooling operations on the Main Floor Area of S-1002 by A-1007.

[Basis: Regulations 2-1-403, 2-6-423]

3.27 The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 1 Source S-1001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-1009 Baghouse at Plant 1.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

3.28 The owner/operator of Plant 1 A-1009 Baghouse shall not exceed PM10 emissions of 0.0017 grains per dry standard cubic foot as determined by District-approved methods per Part 4.31.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, BACT, Cumulative Increase]

PLANT 2

3.29 The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 2 Source S-2027 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-2003 Baghouse at Plant 2.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

PLANT 3

3.30 The owner/operator shall route all PM emissions, including PM10 emissions, from Source S-3001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-3001 Baghouse at Plant 3.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

3.31 The owner/operator of Plant 3 shall keep the two exhaust vents above the molding area (S-3014) fully closed at all times of operation of S-3014. The owner/operator of Plant 3 shall shut off the roof fans and fully close the dampers when the roof intake vents are shut off. The owner/operator shall only perform maintenance on S-3014 while S-3014 is not operating. The owner/operator of S-3014 shall only open these two exhaust vents above S-3014 during periods of maintenance.

[Basis: Regulations 2-1-403, 2-6-423]

3.32 The owner/operator of Plant 3 shall not have any fugitive visible emissions from S-3004 at Plant 3, while S-3004 Casting Mold Shakeout Station is operating. The owner/operator shall complete the shakeout and ensure that sand is not left and/or stored in S-3004.

[Basis: Regulations 2-1-403, 2-6-423]

ODOR MINIMIZATION

3.33 The owner/operator shall implement a District-approved written program to respond to odor complaints from the community.

If the District has not confirmed an odor complaint to the facility for a period of 24 consecutive months, the owner/operator is not required to follow this program until such time that the District confirms an odor complaint to the facility.

[Basis: Regulations 2-1-403 and 2-6-423]

4. Monitoring and Recordkeeping Requirements

4.1 The owner/operator shall calculate and record monthly and rolling 12-month total emissions (tons) for all sources using the equations in Part 3.4.

CARBON ADSORPTION SYSTEMS (Plants 1, 2, and 3)

Depending on the activity level at each plant, the following Parts 4.2 through 4.7 require the installation and operation of an organic vapor-analyzer-flame ionization detector (FID) system for each carbon adsorption system in Plants 1, 2, and 3 as the parametric monitoring and recording system to demonstrate compliance with the Synthetic Minor Operating Permit, including the determination of carbon breakthrough and verification of system control efficiencies.

4.2 Within 90 days of either exceeding 4,500 tons of steel production at Plant 1 or Plant 2 or of an indication that production will exceed 4,500 tons of steel at Plant 1 or Plant 2, unless prior to the expiration of the 90-day period the APCO approves a later date not to exceed 180 days of the issuance of the SMOP, the owner/operator shall properly install, at the plant that exceeded or will exceed the threshold, a District-approved FID system to measure and record both the inlet and outlet volatile organic compounds (VOC) concentration of the respective carbon adsorption systems (A-1007 at Plant 1, A-2007 at Plant 2). This parametric monitoring system shall provide for the calculation and recording of VOC mass emissions from the inlet and outlet of each carbon adsorption system, control efficiencies, and carbon breakthrough determinations.

[Basis: Regulations 2-6-423, 2-1-403, 1-523, 1-301, 7, Cumulative Increase, Rule 2-5]

4.3 Prior to installing a District-approved FID at A-1007 or A-2007 per Part 4.2, the owner/operator shall conduct a source test at the inlet of the carbon adsorption unit for total hydrocarbon analysis using EPA Method 18 or a District-approved equivalent method, to determine specific organic compounds and an appropriate FID response factor.

[Basis: Regulation 2-6-423, 2-1-403, 1-523, 1-307, Cumulative Increase, Rule 2-5]

4.4 Prior to installing a District-approved FID at A-1007 or A-2007 per Part 4.2, the owner/operator shall conduct hydrocarbon sampling at both the inlets and outlets of each carbon adsorption system's carbon bed during either pouring or shake-out operations at the sources abated by the carbon adsorption system. The owner/operator shall also conduct analysis of all hydrocarbon samples. The owner/operator shall have such hydrocarbon sampling and analysis conducted by an entity approved in advance by the District. The hydrocarbon sampling and analysis shall be conducted a minimum of once every calendar day.

[Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

4.5 The owner/operator shall properly operate each FID system at all times that any of the respective sources that are being abated by each carbon adsorption system is operating. Each FID system shall do the following:

a. Continuously monitor (i.e. generate at least one valid data point of VOC concentration every l5 minutes) and record at both the inlet and outlet at each carbon adsorption system. If necessary as determined by the APCO, the owner/operator shall substitute the missing data through use of a best engineering practice acceptable to the APCO.

b. Continuously calculate VOC mass emissions from each inlet and outlet VOC concentration data point.

c. Calculate the abatement efficiency of each carbon adsorption system for each set of inlet and outlet data points and averaged over each calendar day and carbon cycle.

d. Determine VOC concentrations by subtracting the FID system bias from the FID measurement.

The FID system shall be subject to the requirements of Regulation 1-523 and those requirements set forth in Parts 3.6 and 3.9.

[Basis: Regulations 1-523, 2-6-423, 1-301, 7, Cumulative Increase]

4.6 The owner/operator shall properly maintain and properly operate a continuous pressure monitor that shall measure and record the pressure drop across each carbon adsorption system carbon bed and each carbon system prefilter.

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

4.7 In order to demonstrate compliance with the above permit conditions, the owner/operator shall maintain the following **FID/Carbon Adsorption/Odor-related information** in a District-approved daily log:

a. The most recent odor panel results in units of DTT for each carbon bed and/or system.

b. FID system bias determination of the sampling/analysis system and the time and date it was established at each carbon bed and/or system.

c. All pressure drop data across each carbon bed or carbon adsorption system.

d. The inlet temperature to each carbon adsorption system carbon bed.

e. Results of all source testing and inlet velocity testing.

f. FID 90 minute and one-minute average total hydrocarbon (THC) concentrations from both the inlet and outlet of each carbon adsorption system carbon bed, as ppm C1.

g. FID daily and cumulative hydrocarbon mass emissions at both the inlet and outlet of each carbon adsorption system carbon bed.

h. At the request of the APCO, make monitoring data available within 30 days following the replacement of carbon at each carbon adsorption system.

i. Carbon-cycle basis abatement efficiency of each carbon adsorption system carbon bed.

j. Daily carbon control efficiency, mass emissions at both the inlet and outlet for the purposes of determining carbon breakthrough and compliance per Parts 3.8, 3.10, 3.11, 3.12, and 3.13.

k. The date that carbon change-outs occur and the steel throughput in tons between carbon change-outs for each plant.

l. Any carbon adsorption system's non-operation times lasting more than one hour.

m. Carbon prefilter change-outs for each carbon bed or system at each plant.

n. Manometer readings for each of the carbon prefilters at each plant.

o. Records that demonstrate that the owner/operator timely ordered the replacement carbon to demonstrate compliance with Part 3.13.

p. All source test data and results for each plants.

q. All records required per Parts 3.13 and 5.3

r. Records of maintenance and repairs, including the date of discovery of the breakdown, and the date and nature of the repair, as required by Part 3.9.

s. Records to verify daily FID system calibrations.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

[Basis: Regulations 2-1-403, 2-6-423, Cumulative Increase, Regulation 1-441]

BAGHOUSE ABATEMENT (Plants 1, 2, and 3)

Plant 1 Broken Bag Leak Detection Device (A-1001 and A-1008 CARBON and A-1009 EAF)

Plant 1 Pressure Drop (A-1001, A-1002, A-1003, A-1004, A-1006, S-1008, S-1009)

Plant 2 Broken Bag Leak Detection Device (A-2001 and A-2002 CARBON and A-2003 EAF)
Plant 2 Pressure Drop (A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, S-2010)

Plant 3 Broken Bag Leak Detection Device (A-3003 and A-3007 CARBON and A-3001 EAF)
Plant 3 Pressure Drop (A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, A-3007)
[Basis: Regulation 2-1-403]

4.8 No later than 180 days from the issuance of the SMOP, the owner/operator shall properly install and properly operate a device at each that measures the pressure drop across each of the following baghouses:

Plant 1: A-1001, A-1002, A-1003, A-1004, A-1006, A-1008, A-1009, and A-1010 Baghouses
Plant 2: A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, and A-2010 Baghouses
Plant 3: A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, and A-3007 Baghouses

The owner/operator shall check each measuring device for plugging at least once every three months. The owner/operator shall cease operation of any equipment abated by any of the abatement devices listed above, when the pressure drop measured across an associated baghouse is outside of the range identified in Part 3.17 and shall not commence operations, until the pressure drop range of the baghouse returns to compliance.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.9 The owner/operator of the facility shall check or inspect the pressure drop across the baghouse at the three plants daily to ensure proper operation.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.10 The owner/operator of the facility shall check or inspect all baghouses at the three plants daily for evidence of particulate breakthrough. If breakthrough is evident from plume observations, dust buildup near the stack outlet, or abnormal pressure drops, the filter bags shall be checked for any tears, holes, abrasions, and scuffs, and replaced as needed.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.11 No later than 180 days from the issuance of the SMOP, the owner/operator shall properly install and properly operate a District-approved broken bag detection device, unless it is determined by the District not to be technologically feasible, then the owner/operator shall properly install and properly operate a District-approved alternative continuous monitoring and recording device, that shall trigger an audible alarm when a preset level is exceeded, on each of the following baghouses:

Plant 1: A-1001, A-1008, and A-1009 Baghouses
Plant 2: A-2001, A-2002, and A-2003 Baghouses
Plant 3: A-3001, A-3003, and A-3007 Baghouses
[Basis: Regulations 6-1-301, 6-1-310, 6-1-311, 2-1-403, 2-6-423]

4.12 In order to demonstrate compliance with these conditions, the owner/operator of the facility shall maintain the following **baghouse monitoring information** in a District-approved daily log:

a. Records of all inspections and all maintenance work including bag replacements for each baghouse. Records of each inspection shall consist of a District-approved log containing the date of inspection and the initials of the personnel that inspects each of the above baghouses.

b. The pressure drop records across all baghouses as required by Parts 3.17 and 4.9 above.

c. In order to demonstrate compliance with Part 4.11, the time, date, and duration of each broken bag leak detector alarm event and the corrective action taken.

d. All source test data and results for each plants.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

[Basis: Regulations 2-1-403, 2-6-423, Cumulative Increase, 1-441]

CAPTURE EFFICIENCY

4.13 To demonstrate operating under a negative pressure, the owner/operator shall comply with the following:

a. The owner/operator shall install, operate, and maintain a minimum of one building digital differential pressure monitor at each of the following three walls in a total enclosure that has a total ground surface area of 10,000 square feet or more:

(i) the leeward wall,

(ii) the windward wall, and

(iii) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus 10 meters of the midpoint of a straight line between the two other monitors specified. The midpoint monitor must not be located on the same wall as either of the other two monitors.

If District-approved, the third monitor may be placed in an alternative location on the midpoint wall or an exterior wall that is not the windward wall, leeward wall or midpoint wall.

b. The owner/operator shall install, operate, and maintain a minimum of one building digital differential pressure monitor at the leeward wall of a total enclosure that has a total ground surface area of less than 10,000 square feet.

c. All digital pressure monitors shall be certified by the manufacturer to be capable of measuring and displaying a negative pressure containing values in the range of 0.01 to 0.2 millimeters mercury (0.005 to 0.11 inches of water) and capable of recording data in increments of 0.002 millimeters of mercury (0.001 inches of water).

d. The owner/operator shall record the differential pressure at least once every 24 hours when in operation. The owner/operator shall record the time and date of each pressure reading and whether or not the recorded pressure was above the minimum value required by this condition.

e. The owner/operator shall calibrate each digital differential pressure monitor in accordance with manufacturer's specifications.

f. The owner/operator shall take corrective action as soon as possible if the differential pressure is below 0.007 inches of water. Corrective action shall return the pressure differential to above the permitted range. The owner/operator shall keep a record of the type and date of any corrective action taken.

The windward wall shall be the exterior wall of a total enclosure that is most impacted by the wind in its most prevailing direction determined by a wind rose using available data from the closest representative

meteorological station. When openings into enclosures are not impacted by ambient wind due to the enclosure being part of a larger structure, the owner/operator may designate which wall of the enclosure to define as the windward wall.

The leeward wall shall be the exterior wall of a total enclosure that is opposite the leeward wall.
[Basis: Regulation 2-6-423, 2-1-403, Synthetic Minor]

4.14 The owner/operator shall use a District-approved instrument to measure the face velocity of each opening of a plant for which a source is operating.

a. The owner/operator shall measure the face velocity of each facility interior opening at least once per operating day. The owner/operator is not required to measure the face velocity for a plant for which no source is operating and for which no mold is being cooled or material is being shaken out.

b. The owner/operator shall maintain a District-approved logbook of all face velocity measurements.

If the APCO determines that significant fugitive emissions are emitted from any source, the APCO may require the owner/operator to conduct tracer gas testing to demonstrate the capture efficiencies listed in Conditions 24466, 24547, and 24548.
[Basis: Regulations 2-1-403, 2-6-423]

4.15 At a minimum of once every three years and unless meeting the criteria specified in Part 4.15b, the owner/operator shall verify the capture efficiencies of any source whose emissions are abated by a control device and whose uncontrolled emissions exceed 10 percent of an emissions limit in Part 3.2. The owner/operator shall verify capture efficiencies using tracer gas testing.

a. At the issuance of this SMOP, the following sources and respective abatement devices have been identified as having maximum uncontrolled emissions exceeding 10 percent of an emissions limit in Part 3.2. For entries with more than one source and/or abatement device listed, the owner/operator shall verify the capture efficiencies of those sources and/or abatement devices on the same operating day.

Plant	Source(s)	Abatement Device(s)
Plant 1	S-1001	A-1009
Plant 1	S-1003	A-1001 and A-1007
Plant 1	S-1004	A-1001 and A-1007
Plant 1	S-1005	A-1001 and A-1007
Plant 1	S-1006	A-1001 and A-1007
Plant 1	S-1007	A-1001 and A-1007
Plant 1	S-1008	A-1001 and A-1007
Plant 1	S-1012	A-1004
Plant 2	S-2006 through S-2012	A-2004
Plant 2	S-2027	A-2003
Plant 2	S-2028, S-2029, and S-2031	A-2001, A-2002, and A-2007
Plant 2	S-2030	A-2002 and A-2007
Plant 2	S-2033 through S-2040	A-2005
Plant 2	S-2044 through S-2049	A-2010
Plant 3	S-3001	A-3001
Plant 3	S-3004 and S-3019	A-3003, A-3007, and A-3008

Plant 3	S-3009	A-3004
Plant 3	S-3012	A-3004
Plant 3	S-3013	A-3004
Plant 3	S-3016	A-3004
Plant 3	S-3017	A-3004
Plant 3	Finishing Room Cleaning & Grinding	

b. The owner/operator does not have to verify the capture efficiency of a source required per this Part 4.15 if the owner/operator can demonstrate compliance with Part 3.2 using the pre-control emissions rather than post-control emissions for that source.

[Basis: Regulation 2-6-423, 2-1-403, Synthetic Minor]

SOURCE TEST REQUIREMENTS

4.16 No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved PM10 source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the emissions limits in Parts 3.2 and 3.3 and grain loading limits in Part 3.28 and in Condition 24466, 24547, and 24548. The owner/operator shall repeat the source testing on an annual basis thereafter.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.17 No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved CO source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the individual source (S-1001, S-2027, S-3001) CO limits in Conditions 24466, 24547, and 24548 as well as the facility-wide CO limit in Part 3.2. The owner/operator shall repeat the source testing on a biennial (occurring every two years) basis thereafter.

[Basis: Regulations 2-6-423, 2-1-403, Cumulative Increase]

4.18 No later than 120 days from the issuance of this SMOP or the date a source (S-2006, S-2007, S-2008, S-2009, S-2010, S-2011, S-2012) begins operating if it is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved SO2 source tests at S-2006 (Sand Heater), S-2007 (Sand Coating), S-2008 (Coated Sand Pug Mill), S-2009 (Coated Sand Vibrating Screen), S-2010 (Bucket Elevator), S-2011 (Cooling Tower), and S-2012 (Bucket Elevator) to determine initial compliance with the individual source SO2 limits in Condition 24547 as well as the facility-wide SO2 limit in Part 3.2. The owner/operator shall repeat the source testing on an annual basis thereafter.

[Basis: Regulation 2-6-423, 2-1-403, Cumulative Increase]

4.19 No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator shall conduct District-approved source tests for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the HAP limits in Part 3.2. The owner/operator shall provide the steel production rate data during each source test in order to determine an emission factors for each test point. The owner/operator shall repeat the source testing once every 3 years thereafter.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.20 No later than 120 days from the issuance of this SMOP or the date S-3001 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3001 EAF shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM to characterize the emissions from Plant 3 S-3001 EAF (post-modifications to improve capture efficiency). Test points should include the inlet to the baghouse (A-3001), the outlet from the baghouse and the melt shop roof vents. The owner/operator shall report the steel production rate during the test to the District in order to calculate emission factors for each test point.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.21 No later than 120 days from the issuance of this SMOP or the date S-3004 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 Shakeout shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs (contained in Reg. 2, Rule 5), benzene, formaldehyde and NMHC to characterize emissions separate from the S-3019 Pour Area and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007) and before and after the carbon bed (A-3008). The owner/operator shall provide to the District the amount of sand in the molds processed during the test in order to calculate emission factors.

The owner/operator shall conduct annual source tests for a pollutant from a source listed above if the results of an initial source test for that pollutant and source demonstrate any of the following:

a. Emissions exceed an applicable federal, state, or District regulation.
b. Emissions would cause an increase in health risk above a previously calculated level per Regulation 2, Rule 5 or would cause the facility health risk to exceed a previously calculated level per AB 2588 (Air Toxics "Hot Spots" Program).
c. The variation between source test results and previous source test results on an activity basis (e.g. lbs per ton of material) exceed 50 percent.

The owner/operator may petition to reduce the frequency of source testing by submitting a permit application and demonstrating that the source and pollutant no longer meet any of the conditions listed above.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.22 No later than 120 days from the issuance of this SMOP or the date S-3019 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3, S-3019, Pour Area shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize emissions separate from the S-3004 Shakeout and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007), and before and after the carbon bed (A-3008). The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test should include not only the pouring operation, but also a cooling period.

The owner/operator shall conduct annual source tests for a pollutant from a source listed above if the results of an initial source test for that pollutant and source demonstrate any of the following:

a. Emissions exceed an applicable federal, state, or District regulation.
b. Emissions would cause an increase in health risk above a previously calculated level per Regulation 2, Rule 5 or would cause the facility health risk to exceed a previously calculated level per AB 2588 (Air Toxics "Hot Spots" Program).
c. The variation between source test results and previous source test results on an activity basis (e.g. lbs per ton of material) exceed 50 percent.

The owner/operator may petition to reduce the frequency of source testing by submitting a permit application and demonstrating that the source and pollutant no longer meet any of the conditions listed above.

[Basis: Regulations 2-6-423, 2-1-403, 2-5]

4.23 No later than 120 days from the issuance of this SMOP or the date S-2029 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2029, Shell Mold Pouring Station shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2029 emissions separate from S-2031 Shake Out & Tray Sanding, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2029, but before the common ducting for the other sources. Testing should be done for the sand molds that are prepared using the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors.

The owner/operator shall conduct annual source tests for a pollutant from a source listed above if the results of an initial source test for that pollutant and source demonstrate any of the following:

a. Emissions exceed an applicable federal, state, or District regulation.
b. Emissions would cause an increase in health risk above a previously calculated level per Regulation 2, Rule 5 or would cause the facility health risk to exceed a previously calculated level per AB 2588 (Air Toxics "Hot Spots" Program).
c. The variation between source test results and previous source test results on an activity basis (e.g. lbs per ton of material) exceed 50 percent.

The owner/operator may petition to reduce the frequency of source testing by submitting a permit application and demonstrating that the source and pollutant no longer meet any of the conditions listed above.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.24 No later than 120 days from the issuance of this SMOP or the date S-2031 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2031, Shakeout & Tray Sanding, shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2031 emissions separate from S-2029 Shell Mold Pouring Station, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2031, but before the common ducting for the other sources. Testing shall be conducted on sand molds that use the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of sand in the molds processed during the test in order to calculate emission factors.

The owner/operator shall conduct annual source tests for a pollutant from a source listed above if the results of an initial source test for that pollutant and source demonstrate any of the following:

a. Emissions exceed an applicable federal, state, or District regulation.

b. Emissions would cause an increase in health risk above a previously calculated level per Regulation 2, Rule 5 or would cause the facility health risk to exceed a previously calculated level per AB 2588 (Air Toxics "Hot Spots" Program).

c. The variation between source test results and previous source test results on an activity basis (e.g. lbs per ton of material) exceed 50 percent.

The owner/operator may petition to reduce the frequency of source testing by submitting a permit application and demonstrating that the source and pollutant no longer meet any of the conditions listed above.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.25 No later than 120 days from the issuance of this SMOP or the date S-2030 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2030, Cast Mold Cooling Room shall conduct a one-time source test for filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2030 emissions separate from S-2029 Shell Mold Pouring Station, S-2031 Shake Out & Tray Sanding and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2030, but before the common ducting for the other sources. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds.

The owner/operator shall conduct annual source tests for a pollutant from a source listed above if the results of an initial source test for that pollutant and source demonstrate any of the following:

a. Emissions exceed an applicable federal, state, or District regulation.

b. Emissions would cause an increase in health risk above a previously calculated level per Regulation 2, Rule 5 or would cause the facility health risk to exceed a previously calculated level per AB 2588 (Air Toxics "Hot Spots" Program).

c. The variation between source test results and previous source test results on an activity basis (e.g. lbs per ton of material) exceed 50 percent.

The owner/operator may petition to reduce the frequency of source testing by submitting a permit application and demonstrating that the source and pollutant no longer meet any of the conditions listed above.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.26 No later than one year from the issuance of this SMOP or the date a source (S-1002, S-1003, S-1004) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 1, S-1002 (Pour-Off Area), S-1003 (B Shake Out), and S-1004 (A Shake Out) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 1. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.27 No later than one year from the issuance of this SMOP or the date a source (S-2029, S-2030, S-2031) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2 S-2029 (Shell Mold Pouring Station), S-2030 (Cast Mold Cooling Room), and S-2031 (Shakeout & Tray Sanding) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 2. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

4.28 No later than one year from the issuance of this SMOP or the date a source (S-3004, S-3019) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 (Casting Mold Shake Out Station) and S-3019 (Pouring and Cooling) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 3. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

CONTROL EFFICIENCY VERIFICATION

4.29 The owner/operator of the facility shall conduct District-approved annual PM10 source tests at each baghouse upstream of each carbon adsorption system. In order to determine compliance with the control efficiencies used in Part 1.2 and 3.2, the owner/operator shall test the following points:

Plant 1: inlet and outlet of A-1001 and A-1008 and the outlet of A-1007
Plant 2: inlet and outlet of both A-2001 and A-2002 and the outlet of A-2007
Plant 3: inlet and outlet of both A-3003 and A-3007 and the outlet of A-3008

[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]

4.30 The owner/operator of the facility shall conduct District approved source tests at each of the following baghouses and sources per the frequencies and pollutants specified below:

Annual Source Test Frequency	
A-1001, A-1004, A-1009	PM10
A-2001, A-2002, A-2003	PM10
A-3001, A-3003, A-3007	PM10
S-2006 to S-2012	SO2
S-2006 to S-2012	Non-Methane Hydrocarbons

Once Every Two Years Source Test Frequency	
A-1009	CO

A-2003	CO
A-3001	CO

Once Every Three Years Source Test Frequency

A-1002, A-1008	PM10
A-2004, A-2010	PM10
A-3002, A-3003, A-3006, A-3007	PM10
A-1009	Metals*
A-2003	Metals*
A-3001	Metals*
A-1009	Filterable PM
A-2003	Filterable PM
A-3001	Filterable PM

*arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, nickel, selenium, zinc

Once Every Five Years Source Test Frequency

A-1003, A-1006	PM10
A-2005	PM10
A-3004	PM10
S-1002, S-1003, S-1004	CO
S-2029, S-2030, S-2031	CO
S-3004, S-3019	CO

in order to determine compliance with the abatement efficiencies, emissions limits, and/or grain loading contained in Part 1.2.

[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]

SOURCE TEST METHODS

4.31 The owner/operator of the facility shall conduct District approved source tests using the following the approved methods:

Pollutant	Method
Volume Flowrate	EPA Method 2 or CARB Method 2
PM10	EPA Method 201A* and EPA Method 202
CO	EPA Method 10 or CARB Method 10 or 100
SO2	EPA Method 6 or 6C, CARB Method 6 or 100
Filterable PM	EPA Method 5
Metals	
Arsenic	EPA Method 29 or CARB 436
Beryllium	EPA Method 29 or CARB 436
Cadmium	EPA Method 29 or CARB 436
Total Chromium	EPA Method 29 or CARB 436

Hexavalent Chromium	CARB 425
Copper	EPA Method 29 or CARB 436
Lead	EPA Method 12 or 29 or CARB 436
Manganese	EPA Method 29 or CARB 436
Nickel	EPA Method 29 or CARB 436
Selenium	EPA Method 29 or CARB 436
Zinc	EPA Method 29 or CARB 436
PAHs	EPA SW-846 Method 0023A (Modification Approved)
Benzene	EPA Method 18 or TO-15
Formaldehyde	EPA Method 320 or EPA SW-846 Method 001
Non-Methane Hydrocarbons	EPA Method 25 or 25A and EPA Method 8

*If stack gas conditions or port size do not allow the use of EPA Method 201A, the District may approve a different filterable PM method to be used with EPA Method 202. However, in such cases the total measured filterable PM would be assumed to be PM10.

The owner/operator may use an equivalent method to those specified above on a case-by-case basis and for which is pre-approved by the District's Engineering Division and District's Technical Division. [Basis: Regulation 2-6-423, 2-1-403]

CONTINUOUS EMISSIONS MONITORING

4.32 The owner/operator of the facility shall install a continuous emissions monitoring system or District-approved alternative continuous parametric emissions monitoring system for any source with a potential to emit equal to or exceeding 25 tons per year of a criteria pollutant and for which the results of two or more source tests for the source and pollutant indicate a violation of Condition 24466, 24547, or 24548. The facility shall install the monitor per the procedures listed in the District's Manual of Procedures Volume V (Continuous Emission Monitoring Policy and Procedures). For purpose of installation scheduling per the Manual of Procedures, the effective date shall be the date of the second source test indicating a violation of Condition 24466, 24547, or 24548.

The following sources and pollutants have been identified as having a potential to emit equal to or exceeding 25 tons per year.

Source	Pollutant(s)
S-1001	CO, PM10
S-1002	CO
S-2006 to S-2012	SO2
S-2027	CO, PM10
S-2028, S-2029, and S-2031	PM10
S-2030	CO
S-3001	PM10
S-3004 & S-3019	CO

[Basis: Regulation 2-6-423]

DAILY RECORDKEEPING

4.33 In order to demonstrate compliance with the above permit conditions, the owner/operator of the facility shall maintain the following **production/emissions-related information** in a District-approved daily log:

a. In order to demonstrate compliance with Parts 1.2, 3.2, 3.3, 3.8, 3.10, 3.11, 3.12, and 3.13 carbon capture efficiency records for each source contained in Part 3.3, in the units used in Part 3.3, with monthly summaries and consecutive 12-month totals

b. The total amount of steel throughput at each plant in tons at each plant

c. The total amount of binder and catalyst usage in tons at each plant

d. The total amount of coated sand usage in tons at each plant

e. The total amount of pre-coated sand usage in tons at each plant

f. The total amount of stainless steel castings produced in tons at each plant

g. Time of first casting poured and last casting poured at each plant

h. Start and end times of shakeout at each plant

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

[Basis: Cumulative Increase, Regulation 1-441]

4.34 The owner/operator shall maintain records for at least five years of emission calculations and raw data and parameters used in the emission calculations.

5. Reporting Requirements

ABATEMENT EQUIPMENT PERFORMANCE REPORTING

5.1 The owner/operator shall submit a carbon breakthrough report within 10 days of breakthrough, as defined in Part 3.7 and determined in Part 4.4, at A-1007 or A-2007 to the Director of Engineering, with a copy to the Director of the Compliance and Enforcement. The plant report shall include all of the following information about the carbon cycle in which carbon breakthrough occurred and the sources abated by that plant's carbon adsorption system:

a. The date, time and location of each daily hydrocarbon sample taken and whether pouring and/or shake out operations occurred during the sampling.

b. The daily hydrocarbon sampling's analytical results.

c. The number of days of operation prior to breakthrough.

d. The daily tonnage of steel throughput.

e. The number of castings produced each day during the operation period prior to breakthrough.

f. The total tons of sand used each day during the operation period prior to breakthrough.

g. The total tons of binder and catalyst materials used each day during the operation period prior to breakthrough.

h. The date and time of the last pouring operation prior to breakthrough.

[Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

5.2 The owner/operator shall notify the District staff no later than three business days after each carbon replacement at A-1007, A-2007, or A-3008 per Part 3.13.

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

5.3 If carbon breakthrough occurs as defined in Parts 3.8, 3.10, and/or 3.11, the owner/operator shall submit a notification in accordance with Part 5.13.

[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

QUARTERLY COMPLIANCE REPORTING

5.4 In order to demonstrate compliance with Parts 3.2 and 3.3, the owner/operator shall submit a District-approved quarterly throughput and emissions report within thirty days of the end of the previous calendar quarter. The report shall provide the information listed below with supporting documentation for each of the previous three months, the previous calendar quarter and the previous consecutive twelve-month period. The owner/operator shall calculate the consecutive 12-month emissions estimates using the actual throughputs and District-approved emissions factors and assumptions contained in Part 3.3. In addition to normal operation, the owner/operator shall include emissions resulting from any startup, shutdown, and malfunction periods. The report shall include:

a. Monthly throughputs from all sources contained in Part 3.3.

b. Total Plant 1 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.

c. Total Plant 2 emissions POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.

d. Total Plant 3 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.

e. Total facility emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.

f. Total facility emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/consecutive 12 months for each month covered in the quarterly report.

g. All FID inlet and outlet monitoring data for the carbon adsorption abatement system and/or carbon beds for each plant.

h. For each plant, the cumulative total hydrocarbon (THC) mass emissions for each carbon cycle, measured at the inlet of each carbon adsorption system that is required to have a THC mass emissions monitoring device pursuant to Part 4.2.

i. Carbon control efficiencies corresponding to the 90-minute averages for each of the carbon adsorption abatement systems as determined by the FID monitoring systems.

j. For each plant's carbon adsorption system, the average control efficiencies averaged over each carbon cycle as determined by the FID monitoring systems.

k. The control efficiencies determined in Part 3.12.

l. Dates and amounts of each carbon replacement as required by Parts 3.8, 3.10, and 3.11.

m. Combined facility aerosol paint spray can usage in gallons and emissions in pounds or tons. The POC emissions shall be included with the emissions estimates in Part 3.4 in order to demonstrate compliance with the POC emission limit contained in Part 3.2a.

n. All material safety data sheets for all aerosol spray paints used during the previous quarterly period if either the MSDS has changed since the previous MSDS submittal for that aerosol spray paint or the owner or operator has not used such aerosol spray paint within the past five years and identification of all materials used including quantities of each material.

o. Cumulative steel production rates for the previous quarter and consecutive 12-month period at each facility.

The owner/operator shall submit the report to the Director of Engineering with a copy to the Director of Compliance & Enforcement. The owner/operator shall follow the reporting procedure outlined in Part 5.13 for any discovery of non-compliance or potential non-compliance.

The owner/operator shall retain all quarterly throughput and emissions reports and accompanying documentation at the facility for five years from the date of the report. The owner/operator will make the reports and accompanying documentation available for inspection by District staff upon request. [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

5.5 The owner/operator shall submit an annual compliance certification report to both the Director of Engineering and Director of Compliance & Enforcement consistent with requirements of Reg. 2-6-426. The owner/operator shall certify the facility's compliance with the requirements of all parts, including Parts 3.2, 3.3, 3.8, 3.10, 3.11, and 3.12. The annual report shall specifically include all emissions-related information including, but not limited to, throughput, capture/control efficiencies, and emissions factors. If during the certification review, the owner/operator determines that any of the emissions-related items listed above are no longer accurate, or are underestimating the emissions from any source, then the owner/operator shall submit a completed permit application to the District within 30 days of either the annual compliance certification notice or any monitoring data throughout the year that indicates inaccurate or underestimated emissions from the source, such as FID or source test data. [Basis: Regulations 2-1-403, 2-6-423, Cumulative Increase, 1-441]

PERMIT APPLICATIONS

5.6 In order to establish the initial and subsequent carbon breakthrough-related parameters for Part 3.10 and Part 3.11, the owner/operator shall submit permit applications to the District within 30 days of the collection of 6 months, one year, and two years of FID data from the date of issuance of this permit condition. The APCO shall determine enforceable parameters for Plant 1 and Plant 2 following similar FID data analysis used to determine the carbon breakthrough-related parameters for Plant 3 in Part 3.8. [Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

5.7 No later than 60 days from the installation of a pressure drop measuring device required per Part 4.8, the owner/operator shall submit a permit application to revise Part 3.17 to include the minimum and maximum operating pressure drop range specific to the baghouse being measured. [Basis: Regulation 2-6-423, 2-1-403]

5.8 Prior to the use of purchased pre-coated sand at Plant 3, the owner/operator shall submit a permit application to the District in order to obtain an Authority to Construct and/or Permit to Operate for the use of purchased pre-coated sand at Plant 3 and a revision to Part 3.21. [Basis: Regulation 2-5, Cumulative Increase]

5.9 If the corrective action proposed to be taken per Part 5.13 is to modify the applicable limit set forth in Parts 3.2, 3.3, 3.8, 3.10, 3.11, 3.12, 3.13, or 4.2, the owner/operator shall submit a permit application within 30 days of the date of discovery to modify that limit. [Basis: Regulation 2-6-423, 2-1-403]

5.10 If a continuous emissions monitor or an alternative continuous parametric emissions monitoring system is installed at the facility, the owner/operator shall submit a permit application to revise these synthetic

minor operating permit conditions to include the additional monitoring. The permit application should be submitted to the District within 60 days of the District certifying the monitor or monitoring system.

[Basis: Regulation 2-6-423, 2-1-403, Synthetic Minor]

5.11 No later than 90 days from the issuance of this SMOP, the owner/operator of Plant 3 S-3004 (Casting Mold Shake Out Station) and S-3019 (Pouring and Cooling) shall submit a permit application for a New Source Review analysis of carbon monoxide emissions from S-3004 and S-3019. Within 60 days of issuance of an NSR permit, the owner/operator shall submit a permit application to revise these synthetic minor operating permit conditions to include the additional monitoring or emissions limitation resulting from the analysis.

[Basis: Regulation 2-6-423, Regulation 2-2]

SOURCE TEST AND CAPTURE EFFICIENCY TEST REPORTS

5.12 The owner/operator shall submit results of all source tests or capture efficiency tests required by this condition to the District Source Test Manager no later than 60 days after the source test or capture efficiency test. The owner/operator shall obtain approval for all source test or capture efficiency test procedures from the District's Source Test Section prior to conducting any tests and shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test or capture efficiency test protocols and projected test dates at least 7 days prior to testing.

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

NOTIFICATION AND NON-COMPLIANCE REPORTING

5.13 The owner/operator shall report any instance of carbon breakthrough or non-compliance with any permit condition in writing to the Director of Compliance and Enforcement with a copy to the Director of Engineering within 10 calendar days of discovery of non-compliance. The report shall describe the incident and any corrective action taken to address the incident and to assure future compliance with the permit condition.

[Basis: Regulation 2-6-423, 2-1-403]

6. SEVERABILITY

6.1 In the event that any provision of this permit is invalidated by a court or tribunal of competent jurisdiction, or by the Administrator of the EPA, all remaining portions of the permit shall remain in full force and effect.

[Basis: Regulation 2-6-423]

Condition # 24466
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Plant #1

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 1 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No. 1001, Arc Furnace abated by A-1009
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	1.24E+02	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	3.62E+0e	2.16E+04	2.52E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 1002, Pour-off area abated by A-1008 and A-1007
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	4.52E-01	86.50%	90.50%
CO	6.00E+00	86.50%	0%
PM10/2.5	5.83E-01	86.50%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.58E+02	4.24E+02	6.82E+02
CO	3.61E+04	5.63E+03	4.17E+04
$PM_{10/2.5}$	5.25E+00	5.47E+02	5.52E+02

Source No. 1003, B Shake Out (Dust Collection) abated by A-1001, A-1007
Max. Annual throughput = 22,920 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.00E-02	95.00%	90.50%
$PM_{10/2.5}$	1.00E+01	95.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	1.65E+02	9.17E+01	2.57E+02
$PM_{10/2.5}$	3.27E+02	1.15E+04	1.18E+04

Source No.1004, A Shake Out (Dust Collection) abated by A-1001, A-1007
Max. Annual throughput = 45,840 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	7.68E-02	99.00%	90.50%
PM10/2.5	9.62E+00	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	3.31E+02	3.52E+01	3.66E+02
PM10/2.5	6.55E+02	4.41E+03	5.06E+03

Source No.1005, SAND SYSTEM (DUST COLLECTION) abated by A-1001, A-1007
Max. Annual throughput = 63,140 tons sand
Max. Annual throughput = 1,094 gallons mold release

Pollutants	Unabated Emissions Factors (lb/unit)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%
VOC	3.05E+00	99.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.06E+01	3.41E+02	3.92E+02
VOC	3.14E+02	3.34E+01	3.48E+02

Source No.1006, SAND COOLER, 6 SCREEN, abated by A-1001, A-1007
Max. Annual throughput = 34,727 tons sand

Max. Annual throughput = 330 gallons mold release

Pollutants	Unabated Emissions Factors (lb/unit)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%
VOC	1.60E+00	99.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.78E+01	1.88E+02	2.15E+02
VOC	4.98E+01	5.29E+00	5.51E+01

Source No.1007, SAND SCREEN abated by A-1001, A-1007
Max. Annual throughput = 34,727 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.78E+01	1.88E+02	2.15E+02

Source No.1008, MULLER abated by A-1001, A-1007
Max. Annual throughput = 63,140 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.06E+01	3.41E+02	3.92E+02

Source No.1010, MULLER, CORE SAND abated by A-1001
Max. Annual throughput = 4929 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.95E+00	2.66E+01	3.06E+01

Source No.1011, MULLER abated by A-1010
Max. Annual throughput = 5 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.01E-03	2.70E-02	3.10E-02

Source No.1012, CLEANING & GRINDING DEPT. abated by A-1004
Max. Annual throughput = 12,600 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.29E+01	2.14E+03	2.22E+03

Source No.1013, ARC-AIR BOOTH abated by A-1004
Max. Annual throughput = 8,760 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.39E-02	8.76E-01	9.10E-01

Source No.1014, ARC-AIR BOOTH abated by A-1006
Max. Annual throughput = 8,760 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.39E-02	8.76E-01	9.10E-01

Source No.1015, PANGBORN TABLE BLAST abated by A-1003
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	99.57%

$PM_{2.5}$	4.00E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	7.22E-01	0.00E+00	7.22E-01
$PM_{2.5}$	7.22E-02	0.00E+00	7.22E-02

Source No.1016, ROTO-BLAST abated A-1002
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	98.00%
$PM_{2.5}$	4.00E-03	100.00%	98.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	3.36E+00	0.00E+00	3.36E+00
$PM_{2.5}$	3.36E-01	0.00E+00	3.36E-01

Source No.1017, ROTO-BLAST abated A-1002
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	98.00%
$PM_{2.5}$	4.00E-03	100.00%	98.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	3.36E+00	0.00E+00	3.36E+00
$PM_{2.5}$	3.36E-01	0.00E+00	3.36E-01

Source No. 1018, HEAT TREATING FURNACES
Max. Annual throughput = 560,640 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	5.50E+03	0.00E+00	5.50E+03
CO	4.62E+03	0.00E+00	4.62E+03
VOC	3.02E+02	0.00E+00	3.02E+02
$PM_{10/2.5}$	4.18E+02	0.00E+00	4.18E+02

SO_2	3.30E+01	0.00E+00	3.30E+01

Source No. 1019, Raw Sand Receiving
Max. Annual throughput = 30,000 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.41E+01	1.62E+02	1.86E+02

Source No. 1022, Core Bake Ovens (exempt)
Max. Annual throughput = 140,160 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.37E+03	0.00E+00	1.37E+03
CO	1.15E+03	0.00E+00	1.15E+03
VOC	7.56E+01	0.00E+00	7.56E+01
$PM_{10/2.5}$	1.04E+02	0.00E+00	1.04E+02
SO_2	8.24E+00	0.00E+00	8.24E+00

Source No. 1027, Core-Making Operation
Max. Annual throughput = 6,300 gallons binder

Pollutants	Unabated Emissions Factors (lb/gallon)	Capture Efficiency Required	Control Efficiency Required
VOC	6.42E-01	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	0.00E+00	4.05E+03	4.05E+03

Source No. 32001, MINOR SOURCES (small ladle heater, exempt)
Max. Annual throughput = 29,696 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%

SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	2.91E+02	0.00E+00	2.91E+02
CO	2.45E+02	0.00E+00	2.45E+02
VOC	1.60E+01	0.00E+00	1.60E+01
$PM_{10/2.5}$	2.21E+01	0.00E+00	2.21E+01
SO_2	1.75E+00	0.00E+00	1.75E+00

Emissions from stacks:

Baghouse A-1001
Abating S-1003, S-1004, S-1005, S-1006, S-1007, S-1008, S-1010, S-1011, and S-1019
Required Emissions Limits: 0.0045 gr/dscf
Maximum Flow Rate: 37,287 dscfm
Operation Hour: 8760 hours/year

Baghouse A-1002
Abates: S-1016 and S-1017
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 6,325 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1003
Abates: S-1015
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 3,680 dscfm
Maximum Operation Hour: 8760 hours/year

Baghouse A-1004
Abates: S-1012 and S-1013
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 10,323 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1006
Abates: S-1014
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 40,294 dscfm
Maximum Operation Hour: 6000 hours/year

Baghouse A-1008
Abates: S-1002
Required Emissions Limits: 0.0045 gr/dscf
Maximum Flow Rate: 3,228 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1009
Abates: S-1001
Required Emissions Limits: 0.0017 gr/dscf

Maximum Flow Rate: 41,443 dscfm
Maximum Operation Hour: 6000 hours/year

Condition # 24548
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Co-Plant #2

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 2 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No.2001, SAND SILO LOADING ELEVATOR abated by A-2005
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.08E+01	2.79E+02	2.90E+02

Source No. 2002, SAND SILO #1 abated by A-2005
Max. Annual throughput = 2,588 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.41E+00	1.40E+02	1.45E+02

Source No. 2003 SAND SILO #2 abated by A-2005

Max. Annual throughput = 2,587 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.41E+00	1.40E+02	1.45E+02

Source No. 2004 BUCKET ELEVATOR abated by A-2005
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.08E+01	2.79E+02	2.90E+02

Source No. 2005 RESIN TANK (LIQUI-BIN)
Max. Annual throughput = 80,000 gallons organic liquid

Pollutants	Unabated Emissions Factor (lb/lb)	Capture Efficiency Required	Control Efficiency Required
VOC	5.91E-04	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.72E+01	0.00E+00	4.72E+01

Source No. 2006 SAND HEATER abated by A-2004
Max. Annual throughput = 37,318 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	99.57%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.66E+02	0.00E+00	3.66E+02
CO	3.07E+02	0.00E+00	3.07E+02
VOC	2.01E+01	0.00E+00	2.01E+01
$PM_{10/2.5}$	1.20E-01	0.00E+00	1.20E-01
SO_2	2.20E+00	0.00E+00	2.20E+00

Source No. 2006 SAND HEATER abated by A-2004
Source No. 2007 SAND COATING abated by A-2004
Source No. 2008 COATED SAND PUG MILL abated by A-2004
Source No. 2009 COATED SAND VIBRATING SCREEN abated by A-2004
Source No. 2010 BUCKET ELEVATOR abated by A-2004
Source No. 2011 COOLING TOWER, COATED SAND abated by A-2004
Source No. 2012 BUCKET ELEVATOR abated by A-2004
Max. Annual throughput = 5,175 tons sand combined

Pollutants	Unabated Emissions Factor (lb/tonthrm)	Capture Efficiency Required	Control Efficiency Required
CO	4.80E-01	100.00%	0.00%
VOC	1.36E+01	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%
SO_2	4.80E+00	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
CO	2.48E+03	0.00E+00	2.48E+03
VOC	7.04E+04	0.00E+00	7.04E+04
$PM_{10/2.5}$	1.20E+01	0.00E+00	1.20E+01
SO_2	2.48E+04	0.00E+00	2.48E+04

Source No. 2013 CORE MOULDING MACHINE
Source No. 2014 CORE MOULDING MACHINE
Source No. 2015 CORE MOULDING MACHINE
Source No. 2016 CORE MOULDING MACHINE
Source No. 2017 CORE MOULDING MACHINE
Source No. 2018 CORE MOULDING MACHINE
Max. Annual throughput = 493 tons sand combined

Pollutants	Unabated Emissions Factor (lb/tonthrm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	1.74E+01	0.00E+00	1.74E+01
$PM_{10/2.5}$	2.66E+02	0.00E+00	2.66E+02

Source No. 2013 CORE MOULDING MACHINE
Max. Annual throughput = 6,841 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%

$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.71E+01	0.00E+00	6.71E+01
CO	5.63E+01	0.00E+00	5.63E+01
VOC	3.69E+00	0.00E+00	3.69E+00
$PM_{10/2.5}$	5.10E+00	0.00E+00	5.10E+00
SO_2	4.02E-01	0.00E+00	4.02E-01

Source No. 2014 CORE MO~~U~~LDING MACHINE
Max. Annual throughput = 6,841 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.71E+01	0.00E+00	6.71E+01
CO	5.63E+01	0.00E+00	5.63E+01
VOC	3.69E+00	0.00E+00	3.69E+00
$PM_{10/2.5}$	5.10E+00	0.00E+00	5.10E+00
SO_2	4.02E-01	0.00E+00	4.02E-01

Source No. 2015 CORE MO~~U~~LDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2016 CORE MO~~U~~LDING MACHINE

Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/year)	Total Emissions (lb/year)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2017 CORE MO~~U~~LDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/year)	Fugitive Emissions (lb/year)	Total Emissions (lb/year)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2018 CORE MO~~U~~LDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02

VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2019, COATED SAND BIN
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/ton~~therm~~)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.20E+01	0.00E+00	1.20E+01

Source No. 2020 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 40,427 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.96E+02	0.00E+00	3.96E+02
CO	3.33E+02	0.00E+00	3.33E+02
VOC	2.18E+01	0.00E+00	2.18E+01
$PM_{10/2.5}$	3.01E+01	0.00E+00	3.01E+01
SO_2	2.38E+00	0.00E+00	2.38E+00

Source No. 2020 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 818 tons sand

Pollutants	Unabated Emissions Factor (lb/ton~~herm~~)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.89E+01	0.00E+00	2.89E+01
$PM_{10/2.5}$	4.42E+02	0.00E+00	4.42E+02

Source No. 2021 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.69E+02	0.00E+00	6.69E+02
CO	5.62E+02	0.00E+00	5.62E+02
VOC	3.68E+01	0.00E+00	3.68E+01
$PM_{10/2.5}$	5.08E+01	0.00E+00	5.08E+01
SO_2	4.01E+00	0.00E+00	4.01E+00

Source No. 2021 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand

Pollutants	Unabated Emissions Factor (lb/tonherm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.67E+01	0.00E+00	9.67E+01
$PM_{10/2.5}$	1.48E+03	0.00E+00	1.48E+03

Source No. 2022 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	90.00%	0.00%
CO	8.24E-03	90.00%	0.00%
VOC	5.39E-04	90.00%	90.50%
$PM_{10/2.5}$	7.45E-04	90.00%	0.00%
SO_2	5.88E-05	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.02E+02	6.69E+01	6.69E+02
CO	5.06E+02	5.62E+01	5.62E+02
VOC	3.15E+00	3.68E+00	6.82E+00
$PM_{10/2.5}$	4.58E+01	5.08E+00	5.08E+01
SO_2	3.61E+00	4.01E-01	4.01E+00

Source No. 2022 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand
.

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.92E-02	90.00%	90.50%
$PM_{10/2.5}$	5.40E-01	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.19E+00	1.07E+01	1.99E+01
$PM_{10/2.5}$	1.33E+03	1.48E+02	1.48E+03

Source No. 2023 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	90.00%	0.00%
CO	8.24E-03	90.00%	0.00%
VOC	5.39E-04	90.00%	90.50%
$PM_{10/2.5}$	7.45E-04	90.00%	0.00%
SO_2	5.88E-05	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.02E+02	6.69E+01	6.69E+02
CO	5.06E+02	5.62E+01	5.62E+02
VOC	3.15E+00	3.68E+00	6.82E+00
$PM_{10/2.5}$	4.58E+01	5.08E+00	5.08E+01
SO_2	3.61E+00	4.01E-01	4.01E+00

Source No. 2023 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand

Pollutants	Unabated Emissions Factor (lb/tonherm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.92E-02	90.00%	90.50%
$PM_{10/2.5}$	5.40E-01	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.19E+00	1.07E+01	1.99E+01
$PM_{10/2.5}$	1.33E+03	1.48E+02	1.48E+03

Source No. 2024 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 40,427 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%

SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.96E+02	0.00E+00	3.96E+02
CO	3.33E+02	0.00E+00	3.33E+02
VOC	2.18E+01	0.00E+00	2.18E+01
$PM_{10/2.5}$	3.01E+01	0.00E+00	3.01E+01
SO_2	2.38E+00	0.00E+00	2.38E+00

Source No. 2024 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 818 tons sand

Pollutants	Unabated Emissions Factor (lb/tonthermn)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.89E+01	0.00E+00	2.89E+01
$PM_{10/2.5}$	4.42E+02	0.00E+00	4.42E+02

Source No. 2025, ABRASIVE BLASTER, CORE AREA abated by A-206
Max. Annual throughput = 263 lbs steel shot

Pollutants	Unabated Emissions Factor (lb/lb steel shotthermn)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	8.63E-03	80.00%	90.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.81E-01	4.54E-01	6.35E-01

Source No. 2026 LARGE LADLE HEATER
Max. Annual throughput = 74,635 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	90.50%
$PM_{10/2.5}$	7.45E-04	100.00%	99.85%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	7.32E+02	0.00E+00	7.32E+02
CO	6.15E+02	0.00E+00	6.15E+02
VOC	3.82E+00	0.00E+00	3.82E+00
$PM_{10/2.5}$	8.34E-02	0.00E+00	8.34E-02
SO_2	4.39E+00	0.00E+00	4.39E+00

Source No. 2027 ELECTRIC ARC FURNACE abated by A-2003
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	5.06E+01	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	1.47E+03	8.79E+03	1.03E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 2028 EAF LADLE STATION W/CANOPY HOOD abated by A-2001
Source No. 2029 SHELL MOLD POURING STATION abated by A-2001
Source No. 2031 SHAKEOUT & TRAY SANDING abated by A-2001
Max. Annual throughput = 6,950 tons steel combined

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.33E-02	90.00%	90.50%
$PM_{10/2.5}$	1.61E+01	89.00%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.95E+01	5.79E+01	1.07E+02
$PM_{10/2.5}$	1.49E+02	1.23E+04	1.25E+04

Source No. 2030 CAST MOLD COOLING ROOM abated by A-2002
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	7.20E-02	99.99%	90.50%
CO	6.0E+00	99.99%	0.00%
$PM_{10/2.5}$	2.57E-01	99.99%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.75E+01	5.00E-02	4.76E+01
CO	4.17E+04	4.17E+00	4.17E+04
$PM_{10/2.5}$	2.68E+00	1.79E-01	2.86E+00

Source No. 2032 ROTOBLAST abated by A-2002
Max. Annual throughput = 13,500 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.96E-02	100.00%	99.85%
$PM_{2.5}$	3.96E-03	100.00%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	8.02E-01	0.00E+00	8.02E-01
$PM_{2.5}$	8.02E-02	0.00E+00	8.02E-02

Source No. 2033 through 2036: ABRASIVE CUT-OFF SAW abated by A-2005
Source No. 2037 through 2040: GRINDER abated by A-2005
Max. Annual throughput = 13,500 tons steel combined

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.88E+01	2.30E+03	2.38E+03

Thermal Sand Recycling System
Source No. 2044 (R-1), Sand Storage Silo abated by A-2010
Source No. 2045 Lump Breaker abated by A-2010
Source No. 2046 Flow Bin (Rejected Material) abated by A-2010
Source No. 2047 Sand Cooler/Air Bed #1 (C-1) Abated by A-2010
Source No. 2048 Material Handling Equipment abated by A-2010
Source No. 2049 (R-1), Thermal Recycling Unit abated by A-2010
Max. Annual throughput = 10,000 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	4.85E-02	99.00%	0.00%
$PM_{10/2.5}$	8.55E+00	99.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.80E+02	4.85E+00	4.85E+02
$PM_{10/2.5}$	3.64E+02	8.55E+02	1.22E+03

Thermal Sand Recycling System
Source No. 2044 (R-1), Sand Storage Silo abated by A-2010
Source No. 2045 Lump Breaker abated by A-2010
Source No. 2046 Flow Bin (Rejected Material) abated by A-2010
Source No. 2047 Sand Cooler/Air Bed #1 (C-1) Abated by A-2010
Source No. 2048 Material Handling Equipment abated by A-2010

Source No. 2049 (R-1), Thermal Recycling Unit abated by A-2010
Max. Annual throughput = 186,588 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.83E+03	0.00E+00	1.83E+03
CO	1.54E+03	0.00E+00	1.54E+03
VOC	1.01E+02	0.00E+00	1.01E+02
$PM_{10/2.5}$	1.39E+02	0.00E+00	1.39E+02
SO_2	1.10E+01	0.00E+00	1.10E+01

Source No. 32000 Miscellaneous Minor Combustion Sources [exempt]
Max. Annual throughput = 37,318 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	3.66E+02	3.66E+02
CO	0.00E+00	3.07E+02	3.07E+02
VOC	0.00E+00	2.01E+01	2.01E+01
$PM_{10/2.5}$	0.00E+00	2.78E+01	2.78E+01
SO_2	0.00E+00	2.20E+00	2.20E+00

Standards for Baghouses

Baghouses A-2001 and A-2002, Abating S-2026, S-2209, S-2030, S-2031, S-2032
Emission Limit: 0.0045 gr/dscf
Maximum Flow: 40,903 dscfm
Annual Operating Hours: 5263 hours/year

Baghouse A-2003 Abating S-2027
Emission Limit: 0.0013 gr/dscf
Maximum Flow: 22,053 dscfm
Annual Operating Hours: 5263 hours/year

Baghouse A-2004 Abating S-2006, S-2007, S-2008, S-2009, S-2010, S-2011, S-2012, and S-2019
Emission Limit: 0.01 gr/dscf

Maximum Flow: 5,902 dscfm
Annual Operating Hours: 4380 hours/year

Baghouse A-2005 Abating S-2033, S-2034, S-2035, S-2036, S-2037, S-2038, S-2039, and S-2040
Emission Limit: 0.0045 gr/dscf
Maximum Flow: 14,170 dscfm
Annual Operating Hours: 5500 hours/year

Baghouse A-2006 Abating S-2025
Emission Limit: 0.01 gr/dscf
Annual Operating Hours: 8760 hours/year

Baghouse A-2010 Abating S-2044, S-2045, S-2046, S-2047, S-2048, and S-2049
Emission Limit: 0.0013 gr/dscf
Maximum Flow: 10,217 dscfm
Annual Operating Hours: 4992 hours/year

Condition # 24547
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Plant #3

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 3 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No. 3001, Electric Arc Furnace abated by A-3001
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	1.03E+02	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	3.01E+03	1.79E+04	2.09E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 3002, Ladle Heater
Max. Annual throughput = 105,120 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	1.03E+03	1.03E+03
CO	0.00E+00	8.66E+02	8.66E+02
VOC	0.00E+00	5.67E+01	5.67E+01
$PM_{10/2.5}$	0.00E+00	7.83E+01	7.83E+01
SO_2	0.00E+00	6.18E+00	6.18E+00

Source No. 3004, Casting Mold Shake Out Station abated by A-3003
Source No. 3019, Casting Mold Shake Out Station abated by A-3003
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.18E+00	99.00%	90.50%
CO	6.00E+00	99.00%	0.00%
$PM_{10/2.5}$	1.8E-02	99.00%	65.00%
Condensable $PM_{10/2.5}$	1.09E-02	99.00%	65.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	5.35E+03	5.69E+02	5.92E+03
CO	4.13E+04	4.17E+02	4.17E+04
$PM_{10/2.5}$	4.34E+01	1.25E+00	4.46E+01
Condensable $PM_{10/2.5}$	2.61E+01	7.54E-01	2.69E+01

Source No. 3004, Casting Mold Shake Out Station abated by A-3003
Source No. 3019, Casting Mold Shake Out Station abated by A-3003
Max. Annual throughput = 37,800 tons sand combined

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	4.48E-02	99.00%	65.00%
Condensable $PM_{10/2.5}$	3.49E-02	99.00%	65.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.87E+02	1.69E+01	6.04E+02
Condensable $PM_{10/2.5}$	4.57E+02	1.32E+01	4.71E+02

Source No. 3005, Blast Table
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.30E-02	100.00%	99.57%
$PM_{2.5}$	3.30E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.72E+00	0.00E+00	1.72E+00
$PM_{2.5}$	1.72E-01	0.00E+00	1.72E-01

Source No. 3006 Tumble Blast
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.30E-02	100.00%	99.57%
$PM_{2.5}$	3.30E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.72E+00	0.00E+00	1.72E+00
$PM_{2.5}$	1.72E-01	0.00E+00	1.72E-01

Source No. 3007, New Sand Silo #1 abated by A-3004
Max. Annual throughput = 3,366 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.82E+00	0.00E+00	7.82E+00

Source No. 3009, Sand Cooler Classifier abated by A-3004
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3010, Sand Conditioning Unit #1 abated by A-3004
Max. Annual throughput = 18,900 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.39E+01	0.00E+00	4.39E+01

Source No. 3011 Sand Conditioning Unit #2 abated by A-3004
Max. Annual throughput = 18,900 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.39E+01	0.00E+00	4.39E+01

Source No. 3012 Return Sand Bin #1 abated by A-3004
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3013 Reclaimed Sand Bin #2 abated by A-3004
Max. Annual throughput = 34,020 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.90E+01	0.00E+00	7.90E+01

Source No. 3014 Sand Mixer w/Techniset F6000/17712/17717 Binder abated by A-3003 and A-3007
Source No. 3018, Mold Coating Operation abated by A-3003 and A-3007
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.50E-02	75.00%	90.50%
$PM_{10/2.5}$	6.00E-03	75.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.29E+02	8.03E+02	1.03E+03
$PM_{10/2.5}$	2.55E-01	5.67E+01	5.70E+01

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Source No. 3015 New Sand Receiving Bucket Elevator #1

Max. Annual throughput = 3,366 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.82E+00	0.00E+00	7.82E+00

Source No. 3016 Bucket Elevator #2 Returned Sand
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3017 Bucket Elevator #3 Reclaimed Sand
Max. Annual throughput = 34,020 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.90E+01	0.00E+00	7.90E+01

Source No. 3018, Mold Coating Operation abated by A-3003 and A-3007
Max. Annual throughput = 1,200 gallons

Pollutants	Unabated Emissions Factors (lb/gal)	Capture Efficiency Required	Control Efficiency Required
VOC	3.69E+00	75.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	3.15E+02	1.11E+03	1.42E+03

Source No. 3020 Holcote 578 CCD
Max. Annual throughput = 1,200 gallons mold coating

Pollutants	Unabated Emissions Factors (lb/gal)	Capture Efficiency Required	Control Efficiency Required
VOC	1.00E-01	75.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	8.55E+00	3.00E+01	3.86E+01

Exempt Source: Heat Treat Furnaces
Max. Annual throughput = 102,664 therms

Pollutants	Unabated Emissions Factors (lb/therm~~on~~)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	1.01E+03	1.01E+03
CO	0.00E+00	8.45E+02	8.45E+02
VOC	0.00E+00	5.54E+01	5.54E+01
$PM_{10/2.5}$	0.00E+00	7.65E+01	7.65E+01
SO_2	0.00E+00	6.04E+00	6.04E+00

Exempt Source: Finishing Room cleaning and grinding
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	50.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	9.29E+03	2.07E+03	1.14E+04

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Exempt Source: Finishing Room Arc Air Booth/Welding
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	100.00%	50.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	6.08E+00	0.00E+00	6.08E+00

Emissions from stacks/baghouses:

Baghouse A-3001, Abating S-3001

Required Emissions Limits: 0.0014 gr/dscf
Maximum Flow Rate: 41,768 dscfm
Operation Hour: 6000 hours/year

Baghouses A-3002 and A-3006, Abating: S-3005 and S-3006
Required Emissions Limits: 0.0013 gr/dscf
Maximum Flow Rate: 56,362 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouses A-3003 and A-3007, Abating: S-3004, S-3014, S-3018, and S-3019
Required Emissions Limits: 0.0013 gr/dscf
Maximum Flow Rate: 9,618 dscfm
Maximum Operation Hour: 8760 hours/year

Baghouse A-3004, Abating: S-3007, S-3008, S-3009, S-3010, S-3011, S-3012, S-3013, S-3014, S-3015, S-3016, and S-3017
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 11,062 dscfm
Maximum Operation Hour: 7200 hours/year

Recommendation

Issue revised Synthetic Minor Operating Permit to ~~the~~ Pacific Steel Casting.

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Nicholas C. Maiden, P.E. Date

Principal ~~Senior~~ Air Quality Engineer

APPENDIX

APPENDIX A
Adjacent Basis

APPENDIX B
Timeline

Timeline

- 09/09/05 – District informs PSC that Plant 1 is adjacent to Plants 2 and 3 and to submit revised SMOP application
- 10/26/05 – PSC submits application to modify Plant 2 baghouse
- 11/17/05 – PSC submits application for Plant 3 collection system
- 12/06 – 07/05 – PSC conducts source tests (PM) at Plant 1 EAF
- 12/07/05 – PSC conducts source tests (PM, NMOC, trace metals, aldehydes) at Plant 1 casting pour off area
- 12/08/05 – PSC conducts source tests (PM, NMHC, trace metals, aldehydes) at Plant 1 A&B Shakeout
- 12/12/05 – PSC conducts source tests (PM, trace metals) at Plant 2 cast mold cooling
- 12/13/05 – PSC conducts source tests (PAHs, phenols, aldehydes, benzene) at Plant 2 cast mold cooling
- 12/14/05 – PSC conducts source tests (NMHC) at Plant 2 cast mold cooling
- 12/14/05 – District approves modification of Plant 2 baghouse
- 12/14-15/05 – PSC conducts source tests (PM, trace metals, PAHs, phenols, aldehydes, benzene, NMHC) at Plant 2 Shell Mold Pouring
- 12/19/05 – PSC conducts source tests (PM, trace metals, PAHs, phenols, aldehydes, benzene, NMHC) at Plant 2 thermal sand recycling
- 12/20/05 – Enforcement Settlement Agreement – PSC to install Carbon Abatement System in Plant 3 and develop odor control and equipment maintenance plans
- 12/21/05 – PSC conducts source tests (PM, methylene diphenyl diisocyanate, phenols, aldehydes, benzene, NMHC) on Plant 3 sand mixing area
- 12/21/05 – PSC conducts source tests (PM) on Plant 3 EAF
- 12/30/05 – PSC submits SMOP Application 14029
- 12/30/05 – PSC submits application for Plant 3 collection system
- 01/03/06 – District issues permit for Plant 3 collection system
- 01/26/06 – District issues incomplete letter for Application 14029, requests additional information
- 02/22/06 – PSC agrees to extend District completeness review deadline to June 30, 2006
- 03/15-16/06 – PSC conducts source tests (PM, trace metals, hexavalent chromium) at Plant 2 EAF
- 03/20/06 – PSC conducts source tests (phenols, aldehydes, benzene, NMHC) at Plant 2 shell molding machine
- 03/21/06 – HRA source test of Plant 1 core sand mixing station
- 03/22/06 – PSC conducts source tests (PM, trace metals, BTEX, NMHC) at Plant 3 pour area
- 03/23/06 – PSC conducts source tests (PAHs, methylene diphenyl diisocyanate, phenols) at Plant 3 pour area
- 03/27/06 – PSC submits response to District's January 26, 2006 letter
- 03/31/06 – PSC submits Odor Management Plan as required by Enforcement Settlement Agreement
- 05/16/06 – PSC submits letter stating it will miss May 19th due date for revised emissions inventory report
- 06/01-06/06 – District conducts source tests at Plant 3 shake out baghouse
- 06/19/06 – PSC submits application for new Plant 1/Plant 2/Plant sand system and mold release agents
- 06/19/06 – PSC submits application for a Plant 1 portable sand blast station
- 06/19/06 – PSC submits application for Plant 2 mold adhesive source
- 06/29/06 – District issues incomplete letters for Application 13689 and 14029, requests an Emissions Inventory Report with methodology for characterizing PSC's emissions
- 07/14/06 – District issues permit for Plant 3 carbon adsorption system
- 07/25-28/06 – District conducts source tests at Plant 2 carbon unit
- 08/11/06 – PSC files a Permit Appeal and has a Pro Forma Hearing with District Hearing Board
- 08/14/06 – District files a Civil Complaint with Alameda County due to violations of the Settlement Agreement because of PSC's inability to meet the schedule of the carbon unit and failure to submit the Emissions Inventory report
- 08/25/06 – PSC submits a revised Odor Management Plan
- 08/30/06 – District conducts source test at Plant 2 EAF for PM
- 08/30/06 – PSC consultant provides estimated collection system capture efficiencies for all three plants
- 08/31/06 – Pro Forma Hearing with Hearing Board on Permit Appeal
- 09/01/06 – PSC accepts service of District Civil Complaint
- 09/01/06 – PSC submits initial Emissions Inventory Report. District stated it was incomplete
- 09/18/06 – PSC withdraws application for Plant 1 portable sand blast station

- 09/25/06 – District issues letter of exemption for Plant 3 mold coating station
- 11/02/06 – District issues permit for new Plant 1 sand system
- 11/03/06 – District issues permit for new Plant 2 mold adhesive
- 11/07/06 – PSC submits Emissions Inventory Report
- 11/07-09/06 – PSC conducts source and tracer capture efficiency testing for Plant 3 pouring and cooling area
- 12/04/06 – District issues permit for new mold release agent
- 02/05/07 – District issues letter to PSC providing comments on Emissions Inventory Report
- 02/13/07 – District issues letter stating Applications 13689 and 14029 is closing the two applications until an Emissions Inventory Report is submitted, once submitted the two applications will be combined
- 02/15/07 – PSC submits revised Emissions Inventory Report
- 02/23/07 – District accepts and determines Emissions Inventory Report to be complete
- 03/05/07 – District requests additional information, states Application 14029 (combined with Application 13689) has been re-activated
- 03/08/07 – District conducts source test at Plant 3 EAF
- 03/21/07 – PSC submits application for temporary binder at Plant 3 mold mixing area
- 03/28/07 – District issues letter to PSC to extend the HRA submittal date
- 05/23/07 – PSC submits application for Plant 3 baghouse
- 06/07/07 – District issues permit for temporary binder at Plant 3 mold mixing area
- 06/08/07 – PSC submits application for Plant 1 furnace baghouse upgrade
- 06/28/07 – PSC submits SMOP application regulated and hazardous air pollutant emissions inventories report
- 07/23/07 – PSC submits initial HRA. District requested additional information
- 08/16/07 – District issues permit for Plant 1 furnace baghouse upgrade
- 08/16/07 – District issues letter to PSC stating completion of preliminary review of HRA and provided comments
- 08/22/07 – PSC conducts source tests at Plant 3 mold mixing area
- 08/23/07 – PSC conducts source tests at Plant 3 pour area
- 09/06/07 – District issues permit for Plant 3 baghouse
- 09/06/07 – PSC submits application for an alteration to Plant 3 mold shakeout station
- 10/04/07 – PSC conducts source tests at Plant 1 EAF
- 10/17/07 – District completes review of AB2588 facility-wide health risk assessment
- 11/01/07 – PSC submits a revision to the Odor Management Plan
- 11/02/07 – PSC submits application for change in conditions for Plant 1 steel pour off area and shakeout sources
- 11/02/07 – PSC submits application to use no bake binder at Plant 1 core room
- 11/11/07 – District issues public notice requesting public comments regarding HRA
- 12/05/07 – District issues permit for alteration of Plant 3 mold mixing area
- 12/12/07 – West Berkeley Air Monitoring Station begins measurements
- 12/14/07 – OEHHA issues review of AB2588 facility-wide health risk assessment
- 12/20/07 – District holds public community meeting to discuss HRA
- 12/17/07 – PSC submits calculations of NMOC & toxics for Plant 1 core making operation
- 12/31/07 – District e-mails PSC regarding sufficient monitoring for baghouses and carbon units
- 01/3-4/08 – PSC and District exchange e-mails regarding proposed monitoring requirements
- 02/06/08 – PSC's consultant submits detailed response regarding baghouse and carbon monitoring
- 04/02/08 – District requests copy of Plant 1 core sand mixing station source test
- 05/18/08 – District approves use of no bake binder at Plant 1 core room
- 07/20/08 – District provides PSC draft SMOP conditions
- 09/26/08 – PSC submits copies of SMOP application on CD
- 10/03/08 – District approves PSC's Odor Management Plan
- 10/10/08 – District approves change in conditions for Plant 1 steel pour off area and shakeout sources
- 11/05/08 – District finalizes HRA
- 12/31/08 – West Berkeley Air Monitoring Station stops measurements
- 04/14/09 – District staff reviewed the data from the West Berkeley Air Monitoring Station
- 04/28/09 – District conducts source tests at Plant 3 mold pouring & cooling operations

- 05/11/09 – PSC requests District response to PSC letter dated 02/06/08
- 07/24/09 – District issues detailed response to PSC letter dated 02/06/08
- 07/28/09 – PSC meeting at District to discuss calculations and assumptions
- 07/28/09 – PSC requests District provide all data, calculations, analyses, engineering and regulatory evaluations, and documentation used to develop and form basis of preliminary draft SMOP conditions
- 07/31/09 – District e-mails response to PSC letter and states it does not release drafts or notes that are not deemed a public record or part of the agency's deliberation
- 08/11/09 – District e-mails PSC consultant requesting PSC confirmation for sharing information
- 08/19/09 – PSC submits response to District e-mail stating ENVIRON to be copied on all correspondence and requests basis for emissions estimate
- 01/04/10 – PSC Plant 1 completed modifications to collect emissions from "main floor" pouring and cooling area. Additional containment walls & ducting installed & emissions routed to an existing baghouse & carbon adsorption unit.
- 02/02/10 – District staff visited Plant 1 to observe new modifications at the "main floor" pouring and cooling area to verify improvements in capturing fugitive emissions
- 03/11/10 – District issues draft SMOP conditions for PSC review
- 04/01/10 – PSC submits objections to draft SMOP conditions stating source testing requirements would cost nearly $1 million in the first year, some conditions raise safety concerns, and others are impossible to implement
- 06/08-10/10 – District conducted a source test at Plant 3 to develop updated emission factors for the pouring/cooling and shakeout operations.
- 06/23/10 – District response to PSC letter dated 04/01/10. Informs PSC of basis for source test requirements
- 07/19/10 – PSC-District meeting regarding PM emissions
- 09/09/10 – PSC submits memo regarding EAF PM source testing requirements
- 10/13-14/10 – District conducted source tests at Plant 2 to determine organic hydrocarbon loading at the carbon adsorption unit based on current operations and production levels.
- 12/03/10 – PSC submits memo regarding POC emissions from Plant 3 carbon unit
- 04/11/11 – District issues draft SMOP permit conditions for PSC review
- 04/12/11 – District conducts source tests on Plant 1 abatement devices to determine flow rates
- 04/12/11 – District conducts source tests on Plant 3 blast table
- 04/27/11 – District conducts source tests at Plant 2 baghouses
- 05/29/12 – PSC submits responses to draft SMOP permit conditions
- 11/12/12 – PSC conducts source tests of EAFs at Plants 1, 2, and 3 for PM_{10} including condensable PM
- 01/10/13 – District conducts source test of Plant 1 pour-off area for PM_{10} including condensable PM
- 02/15/13 – District informs PSC of proposed changes to emissions spreadsheet
- 03/20/13 – PSC submits response to District on proposed changes to emissions spreadsheet
- 04/02/13 – District meets with PSC
- 04/09/13 – PSC informs District of proposed changes to emissions spreadsheet
- 05/01/13 – District adopts Regulation 12, Rule 13 (Foundry and Forging Operations), applicable to PSC
- 07/24/13 – District informs PSC of proposed changes to emissions spreadsheet
- 08/06/13 – PSC informs District of proposed changes to emissions spreadsheet
- 08/14/13 – District informs PSC of proposed changes to emissions spreadsheet
- 12/03/13 – District conducts source tests for PM_{10} from Plants 1 and 3 EAFs
- 03/12/14 – PSC files for bankruptcy
- 07/10/14 – District contacted by potential buyers of PSC
- 08/25/14 – PSC acquired by new owners
- 11/07/14 – District met with PSC
- 12/03/14 – District site visit and meeting of new ownership/management
- 12/19/14 – PSC conducts source tests for PM_{10} from Plants 1 and 3 EAFs
- 01/11/15 – PSC submits Regulation 12, Rule 13 Emissions Minimization Plant
- 01/17/15 – District issues PSC's Regulation 12, Rule 13 Emissions Minimization Plant for public comment
- 01/23/15 – District informed by another agency of potentially significant CO emissions from pouring, cooling, and shakeout operations
- 02/20/15 – District call with another agency regarding CO emissions from foundry operations

- 05/14/15 – PSC contacts the District regarding new consultant and potential changes to Plant 2 sources
- 06/02/15 – Conference call with PSC about potential Plant 2 source changes
- 06/03/15 – PSC's three plants given new facility number (Plant 22604) and sources re-numbered for ownership change
- 07/27/15 – District sends PSC letter regarding CO emissions from pouring, cooling, and shakeout
- 07/29/15 – District site visit and meeting of PSC consulting engineer
- 08/06/15 – District submits additional information request for SMOP application
- 08/11/15 – PSC provides partial response to request for additional information
- 08/25/15 – PSC has internal meeting regarding CO emissions from pouring, cooling, and shakeout
- 08/26/15 – PSC provides additional responses to information request
- 09/09/15 – PSC requests meeting regarding CO from pouring, cooling, and shakeout
- 10/02/15 – District-PSC meeting regarding CO from pouring, cooling, and shakeout
- 11/18/15 – PSC conducts source tests for PM_{10} from Plant 3 EAF
- 11/23/15 – PSC conducts source tests for PM_{10} from Plant 1 EAF
- 12/11/15 –PSC calls District to discuss CO emissions from pouring, cooling, and shakeout
- 02/10/16 – Member of the public (self-identified as a Berkeley citizen) calls the District to enquire on SMOP status
- 02/12/16 – "Berkeley Citizen" e-mails the District requesting plant number and SMOP
- 02/12/16 – District contacted by EPA regarding PSC
- 02/16/16 – District responds to "Berkeley Citizen" e-mail
- 02/16/16 – District asks if PSC determined a way to source test CO from pouring, cooling, and shakeout
- 02/17/16 – PSC provides response regarding CO source test methodology
- 02/18/16 – District reviews PSC response with District source test manager
- 02/19/16 – District discusses proposed solution to CO source test issue with PSC
- 03/17/16 – District has conference call with PSC regarding CO source test methodology
- 03/29/16 – PSC proposes lower steel throughputs
- 04/22/16 – District provides updated emissions spreadsheets and requests lower proposed throughputs
- 04/25/16 – PSC asks about process of adjusting/raising throughputs in the future
- 04/27/16 – PSC proposes lower steel throughputs to keep potential emissions below 90 tons per year
- 05/12/16 – District provides PSC with draft SMOP conditions
- 05/17/16 – PSC and District exchange e-mails regarding initial source tests
- 05/18/16 – District provides PSC with revised draft SMOP conditions
- 05/19/16 – PSC requests extension for baghouse leak detection installation
- 05/19/16 – PSC provides updated baghouse pressure differential settings
- 05/23/16 – District agrees with PSC request for extension for baghouse leak detection installation
- 05/25/16 – PSC agrees with draft SMOP conditions
- 05/31/16 – District provides PSC with revised draft SMOP conditions
- 06/08/16 – PSC agrees to draft SMOP conditions
- 07/15/16 – District issues draft SMOP conditions for public comment
- 08/15/16 – District agrees to extend public comment period by 15 days
- 08/31/16 – District agrees to extend public comment period by 15 days
- 12/14/16 – District holds public community meeting in the City of Berkeley to receive public comments in person
- 04/05/17 – PSC submits permit application for new induction furnace
- 07/28/17 – District submits information request to the ARB regarding delegation of authority of 40 CFR 63 Subpart YYYYY and ZZZZZ.
- 09/06/17 – ARB informs the District that the District has not been delegated authority for 40 CFR 63 Subparts YYYYY, ZZZZZ, and ZZZZZZ.
- 10/18/17 – PSC withdraws permit application for new induction furnace
- 10/18/17 – PSC withdraws permit application for new induction furnace
- 12/08/17 – PSC announces that it will remain open through end of March 2018
- Feb 2018 – PSC tells City of Berkeley that it will remain open until April 2, 2018
- 05/01/18 – PSC tells the District that it will remain open through July 2018
- 06/02/18 – PSC tells the District that it will remain open through middle of August 2018

APPENDIX CA
Detailed Emission Calculations
(Criteria Air Pollutants)
~~(CONFIDENTIAL)~~

APPENDIX D
Criteria Air Pollutant Emission Factor Bases

APPENDIX E
Detailed Emission Calculations
(Hazardous Air Pollutants)

APPENDIX F
Responses to Public Comments

APPENDIX G
Emissions Minimization Plan
(Public Version)